KENYA ELECTRICITY GENERATING COMPANY PLC

KGN-HYD-019-2019

Tender for supply, installation & commissioning of transformer circuit breaker for Masinga Power Station.
(Open International)

Kenya Electricity Generating Company PLC
Stima Plaza Phase III, Kolobot Road, Parklands
P.O. BOX 47936-00100
NAIROBI.
Website: www.kengen.co.ke

May, 2019

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GUIDELINES TO PREPARATION OF BID DOCUMENT

In preparing the bid document in response to the tender, bidders are advised to note the following:

1. **Section I – Invitation to Tender**. This section gives guidelines on how and where to seek further clarification pertaining to the tender document; the form and amount of Tender Security required; where and when the tenders should be submitted; and place where tenders will be opened.
2. **Section II – Instruction to Tenderers.** This section guides tenderers on how to prepare their bid and how the tendering process will be carried out up to the award stage including notification of award to the successful bidder. "Appendix to Instruction to Tenderers" customizes clauses under Section II. Wherever there is a conflict between the provisions of the Instructions to Tenderers under Section II and the provisions of the appendix, the provisions of the appendix prevail.
3. **Evaluation Criteria:** This gives information on how the tender will be evaluated. Tenderers should be able to evaluate their bids before submission to determine in advance whether they meet the requirement of the bid or not. Through the evaluation criteria bidders will be able to note all the required documents that should be attached to the bid document.

Checklist of Document Forming the Bid

No.	Documents forming part of the bid	Remarks
1	The main sections of the tender document that includes Section I –Invitation to Tender; Section II – Instruction to Tenderers, including Appendix to Instruction to Tenderers; and Section III – General Conditions of the Contract, including Special Conditions of Contract.	These Sections remain as they are in the tender document.
2.	Duly filed mandatory business questionnaire with particulars of the supplier, contractor and shall include: (i) Name of supplier (ii) Registration details (ID/Registration/Incorporation Number) (iii) Tax PIN Number (iv) List of directors, shareholders and beneficial owners (in case of a company) (v) Name of proprietor (for sole proprietor and business name) (vi) Name of partners (for partnerships) (vii) Business contact information (Telephone and Email Address) (viii) Postal Address (ix) Physical address (x) Tax compliance status (xi) Business permit /License number (xii) County of operations	
4	Duly filled priced schedules	Prices quoted to be inclusive of taxes
5	Duly filled and signed Form of Tender in the format provided in the tender document	
6	Duly filled and signed declaration form in the form provided	
7	Bid document to be serialized/paginated on all pages	
8	Bidders to use KenGen' s tender document and ensure to align their bid to it	

Following the Executive Order No.2 of 2018 issued by The Presidency

1. **THAT** effective the **1st of July 2018,** all Public Procuring Entities shall maintain and continuously **update and publicise** (through the websites of the Public Procuring Entity, e-Citizen, Public Procurement Regulatory Authority platforms, public notice boards and/or official government publications):
    - Full Particulars of the awarded Bidder (Supplier, Contractor or Consultant);
    - Specification of goods and services, scope and schedule of works and contract value;
    - Technical and financial capacity of the awarded bidder (Supplier, Contractor or Consultant) and summary of reasons for the award;
    - Award Date and Contract Period;
    - Current market price of the specific goods, works or service, as well as price guidelines as published by the Public Procurement Regulatory Authority with regard to that specific item *(where applicable);*

C. In furtherance to above above, the list of the awarded suppliers/contracts/consultants shall include the following information:
    - Name of Supplier
    - Registration Details (ID/Registration/Incorporation Number
    - PIN Number
    - List of Directors, Shareholders and Beneficial Owners (in case of a company)
    - Name of Proprietor (for sole Proprietor and Business name)
    - Name of Partners (for Partnerships)
    - Business Contacts Information (telephone and email address)
    - Postal address
    - Physical address
    - Tax Compliance Status
    - Business Permit/License Number
    - County of operation

In compliance to the executive order, the above details shall form part of mandatory requirement in the tender documents submitted.

SECTION I
INVITATION TO TENDER

The Company invites sealed tenders from eligible candidates for the **SUPPLY, INSTALLATION AND COMMISSIONING OF TRANSFORMER CIRCUIT BREAKER FOR MASINGA POWER STATION** whose specifications are detailed in the Tender Document. Interested eligible candidates may obtain further information from and inspect the Tender Documents during official working hours starting at the date of advert at the office of:

Supply Chain Director
Tel: (254) (020) 3666000
Email: tenders@kengen.co.ke; akamau@kengen.co.ke; jtheuri@kengen.co.ke;

Where the tender document may be collected upon payment of a non-refundable fee of **KShs.1, 000.00** paid in cash or through a banker's cheque at any KenGen finance office. The document can also be viewed and downloaded from the website www.kengen.co.ke and www.suppliers.treasury.go.ke. Bidders who download the tender document from the website **are advised to forward their particulars to facilitate any subsequent tender clarifications and addenda**. Downloaded copies are free of charge.

Bidders are advised from time to time to be checking the website for any uploaded further information on this tender. Bidders are advised to be keen on the information provided under the Appendix to Instructions to Tenderers (A.I.T.T.) and the Special conditions of the Contract (S.C.C.).

Unless otherwise stated, tenders **MUST** be accompanied by a security in the format and amount specified in the tender documents and must be submitted in a plain sealed envelope and marked "**SUPPLY, INSTALLATION AND COMMISSIONING OF TRANSFORMER CIRCUIT BREAKER FOR MASINGA POWER STATION**" and addressed to:

Company Secretary & Legal Affairs Director
Kenya Electricity Generating Company PLC
10th Floor KenGen Pension Plaza II
Kolobot Road, Parklands
P O Box 47936 - 00100
NAIROBI, KENYA

On or before: **6TH June 2019 AT 2.00pm**

Tenders will be opened on **6TH June 2019 AT 2.30pm** in the presence of the candidates' KenGen Pension Plaza 2, Tender Opening Room, and Ground Floor. The company reserves the right to vary the quantities

KenGen adheres to high standards of integrity in its business operations. Report any unethical behavior immediately to any of the provided anonymous hotline service.
Call Toll Free: 0800722626
Free-Fax: 00800 007788
Email: kengen@tip-offs.com
Website: www.tip-offs.com

SUPPLY CHAIN DIRECTOR

SECTION II

INSTRUCTIONS TO TENDERERS
Table of Clauses

2.1 Eligible Tenderers

2.1.1 This Invitation for Tenders is open to all tenderers eligible as described in the Invitation to Tender. Successful tenderers shall complete the supply of goods by the intended completion date specified in the Schedule of Requirements (Section VI).

2.1.2 The procuring entity's employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.

2.1.3 Tenderers shall provide the qualification information statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring entity to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods under this Invitation for tenders.

2.1.4 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

2.2 Eligible Goods

2.2.1 All goods to be supplied under the contract shall have their origin in eligible source countries.

2.2.2 For purposes of this clause, "origin" means the place where the goods are mined, grown, or produced. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components

2.2.3 The origin of goods is distinct from the nationality of the tenderer.

2.3 Cost of Tendering

2.3.1 The Tenderer shall bear all costs associated with the preparation and submission of its tender, and the procuring entity, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

2.3.2 The price to be charged for the tender document collected from the Procuring Entity shall not exceed Kshs.1,000/=. Downloaded copies are free of charge.

2.3.3 All firms found capable of performing the contract satisfactorily in accordance with the set prequalification criteria shall be prequalified.

2.4. The Tender Document

2.4.1 The tender document comprises the documents listed below and addenda issued in accordance with clause 2.6 of these instructions to Tenderers

(i) Invitation to Tender
(ii) Instructions to tenderers
(iii) General Conditions of Contract
(iv) Special Conditions of Contract
(v) Schedule of requirements
(vi) Technical Specifications
(vii) Tender Form and Price Schedules
(viii) Tender Security Form
(ix) Contract Form
(x) Performance Security Form
(xi) Manufacturer's Authorization Form
(xii) Confidential Business Questionnaire

2.4.2 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the tender documents. Failure to furnish all information required by the tender documents or to submit a tender not substantially responsive to the tender documents in every respect will be at the tenderers risk and may result in the rejection of its tender.

2.5 Clarification of Documents

2.5.1 A prospective tenderer requiring any clarification of the tender document may notify the Procuring entity in writing or by post at the entity's address indicated in the Invitation to Tender. The Procuring entity will respond in writing to any request for clarification of the tender documents, which it receives not later than **seven (7) days prior to the deadline for the submission of tenders,** prescribed by the procuring entity. Written copies of the Procuring entities response (Including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective tenderers that have received the tender document.

2.5.2 The procuring entity shall reply to any clarifications sought by the tenderer **within 3 days** of receiving the request to enable the tenderer to make timely submission of its tender.

2.6 **Amendment of Documents**

2.6.1 At any time prior to the deadline for submission of tenders, the Procuring entity, for any reason, whether at its own initiative or in response to a clarification requested by a prospective tenderer, may modify the tender documents by amendment.

2.6.2 All prospective candidates that have received the tender documents will be notified of the amendment in email and will be binding on them.

2.6.3 In order to allow prospective tenderers reasonable time in which to take the amendment into account in preparing their tenders, the Procuring entity, at its discretion, may extend the deadline for the submission of tenders.

2.7 **Language of Tender**

2.7.1 The tender prepared by the tenderer, as well as all correspondence and documents relating to the tender exchange by the tenderer and the Procuring entity, shall be written in English language, provided that any printed literature furnished by the tenderer may be written in another language provided they are accompanied by an accurate English translation of the relevant passages in which case, for purposes of interpretation of the tender, the English translation shall govern.

2.8 **Documents Comprising of Tender**

2.8.1 The tender prepared by the tenderers shall comprise the following components:

(a) a Tender Form and a Price Schedule completed in accordance with paragraph 2.9, 2.10 and 2.11 below

(b) documentary evidence established in accordance with paragraph 2.1 that the tenderer is eligible to tender and is qualified to perform the contract if its tender is accepted;

(c) documentary evidence established in accordance with paragraph 2.2 that the goods and ancillary services to be supplied by the tenderer are eligible goods and services and conform to the tender documents; and

(d) tender security furnished in accordance with paragraph 2.14

2.9 **Tender Forms**

2.9.1 The tenderer shall complete the Tender Form and the appropriate Price Schedule furnished in the tender documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.

2.10 **Tender Prices**

2.10.1 The tenderer shall indicate on the appropriate Price Schedule the unit prices and total tender price of the goods it proposes to supply under the contract

2.10.2 Prices indicated on the Price Schedule shall include all costs including taxes, insurances and delivery to the premises of the entity.

2.10.3 Prices quoted by the tenderer shall be fixed during the Tender's performance of the contract and not subject to variation on any account. A tender submitted with an adjustable price quotation will be treated as non-responsive and will be rejected, pursuant to paragraph 2.22

2.10.4 The validity period of the tender shall be 120 **days <u>after</u>** the date of opening of the tender.

2.11 **Tender Currencies**

2.11.1 Prices shall be quoted in Kenya Shillings unless otherwise specified in the Appendix to Instructions to Tenderers.

2.12 **Tenderers Eligibility and Qualifications**

2.12.1 Pursuant to paragraph 2.1. the tenderer shall furnish, as part of its Tender, documents establishing the tenderers eligibility to tender and Its qualifications to perform the contract if its tender is accepted.

2.12.2 The documentary evidence of the tenderers eligibility to tender shall establish to the Procuring entity's satisfaction that the tenderer, at the time of submission of its tender, is from an eligible source country as defined under paragraph 2.1

2.12.3 The documentary evidence of the tenderers qualifications to perform the contract if its tender is accepted shall be established to the Procuring entity's satisfaction;

(a) that, in the case of a tenderer offering to supply goods under the contract which the tenderer did not manufacture or otherwise produce, the tenderer has been duly authorized by the goods' Manufacturer or producer to supply the goods.

(b) that the tenderer has the financial, technical, and production capability necessary to perform the contract;
(c) that, in the case of a tenderer not doing business within Kenya, the tenderer is or will be (if awarded the contract) represented by an Agent in Kenya equipped, and able to carry out the Tenderer's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.

2.13 Goods Eligibility and Conformity to Tender Documents

2.13.1 Pursuant to paragraph 2.2 of this section, the tenderer shall furnish, as part of its tender documents establishing the eligibility and conformity to the tender documents of all goods which the tenderer proposes to supply under the contract

2.13.2 The documentary evidence of the eligibility of the goods shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

2.13.3 The documentary evidence of conformity of the goods to the tender documents may be in the form of literature, drawings, and data, and shall consist of:

(a) a detailed description of the essential technical and performance characteristic of the goods;
(b) a list giving full particulars, including available source and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two (2) years, following commencement of the use of the goods by the Procuring entity *(if applicable)*; and
(c) a clause-by-clause commentary on the Procuring entity's Technical Specifications demonstrating substantial responsiveness of the goods and service to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

2.13.4 For purposes of the documentary evidence to be furnished pursuant to paragraph 2.13.3(c) above, the tenderer shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procurement entity in its Technical Specifications, are intended to be descriptive only and not restrictive. The tenderer may substitute alternative standards, brand names, and/or catalogue numbers in its tender, provided that it demonstrates to the Procurement entity's satisfaction that

the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

2.14 Tender Security

2.14.1 The tenderer shall furnish, as part of its tender, a tender security for the amount specified in the Appendix to Invitation to Tenderers.

2.14.2 The tender security shall be in the amount of Kenya Shillings Sixty **(as indicated in the Appendix to Instructions to Tenderers)**

2.14.3 The tender security is required to protect the Procuring entity against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to paragraph 2.14.7

2.14.4 The tender security shall be denominated in Kenya Shillings or in another freely convertible currency, and shall be in the form of an on-demand bank guarantee issued by a reputable bank located in Kenya or where the bank is located abroad, it must have a local correspondent bank.

The Tender Security may also be in the form of an on-demand guarantee issued by a reputable insurance company approved by the Authority and in the form provided in the tender documents or another form acceptable to the Procuring entity.

The tender security must be valid for at least thirty (30) days beyond the validity of the tender.

2.14.5 Any tender not secured in accordance with paragraph 2.14.1 and 2.14.3 will be rejected by the Procuring entity as non- responsive, pursuant to paragraph 2.22

2.14.6 Unsuccessful Tenderer's tender security will be discharged or returned as promptly as possible, but not later than thirty (30) days after the expiration of the period of tender validity prescribed by the Procuring entity.

2.14.7 The successful Tenderer's tender security will be discharged upon the tenderer signing the contract, pursuant to paragraph 2.27 and furnishing the performance security, pursuant to paragraph 2.28

2.14.8 The tender security may be forfeited:

(a) if a tenderer withdraws its tender during the period of tender validity specified by the procuring entity on the Tender Form; or

(b) in the case of a successful tenderer, if the tenderer fails:

(i) to sign the contract in accordance with paragraph 2.27
or
(ii) to furnish performance security in accordance with paragraph 2.28

2.15 Validity of Tenders

2.15.1 Tenders shall remain valid for **90 days <u>after</u>** the date of tender opening prescribed by the Procuring entity, pursuant to paragraph 2.18. A tender valid for a shorter period shall be rejected by the Procuring entity as non-responsive.

2.15.2 In exceptional circumstances, the Procuring entity may solicit the Tenderer's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The tender security provided under paragraph 2.14 shall also be suitably extended. A tenderer may refuse the request without forfeiting its tender security. A tenderer granting the request will not be required nor permitted to modify its tender.

2.16 Format and Signing of Tender

2.16.1 The Tenderer shall prepare **two copies of the tender,** clearly marking each **"ORIGINAL TENDER"** and **"COPY OF TENDER**," as appropriate. In the event of any discrepancy between them, the original shall govern.

2.16.2 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person or persons duly authorized to bind the tenderer to the contract. **The latter authorization shall be indicated by written power-of-attorney accompanying the tender**. **All pages of the tender**, except for un-amended printed literature, **shall be initialed by the person or persons signing the tender.**

2.16.3 The tender shall have no interlineations, erasures, or overwriting except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialed by the person or persons signing the tender.

2.17 Sealing and Marking of Tenders

2.17.1 The Tenderer shall seal the original and each copy of the tender in separate envelopes, duly marking the envelopes as "ORIGINAL" and "COPY." The envelopes shall then be sealed in an outer envelope.

2.17.2 The inner and outer envelopes shall:

(a) be addressed to the Procuring entity at the address given in the Invitation to Tender:

(b) bear, tender number and name in the Invitation for Tenders and the words, "DO NOT OPEN BEFORE **6th JUNE 2019 at 10.00 a.m.** The inner envelopes shall also indicate the name and address of the tenderer to enable the tender to be returned unopened in case it is declared "late".

2.17.3 If the outer envelope is not sealed and marked as required by paragraph 2.17.2, the Procuring entity will assume no responsibility for the tender's misplacement or premature opening.

2.18 **Deadline for Submission of Tenders**

2.18.1 Tenders must be received by the Procuring entity at the address specified under paragraph 2.17.2 no later than **6th JUNE 2019 at 10.00 a.m.**

2.18.2

2.18.3 The Procuring entity may, at its discretion, extend this deadline for the submission of tenders by amending the tender documents in accordance with paragraph 2.6, in which case all rights and obligations of the Procuring entity and candidates previously subject to the deadline will therefore be subject to the deadline as extended

2.19 Modification and Withdrawal of Tenders

2.19.1 The tenderer may modify or withdraw its tender after the tender's submission, provided that written notice of the modification, including substitution or withdrawal of the tenders, is received by the Procuring Entity prior to the deadline prescribed for submission of tenders.

2.19.2 The Tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of paragraph 2.17. A withdrawal notice may also be sent by cable, telex but followed by a signed

confirmation copy, postmarked not later than the deadline for submission of tenders.

2.19.3 No tender may be modified after the deadline for submission of tenders.

2.19.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period of tender validity specified by the tenderer on the Tender Form. Withdrawal of a tender during this interval may result in the Tenderer's forfeiture of its tender security, pursuant to paragraph 2.14.7

2.19.5 The procuring entity may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.

2.19.6 The procuring entity shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

2.20 Opening of Tenders

2.20.1 The Procuring entity will open all tenders in the presence of tenderers' representatives who choose to attend, at **6th JUNE 2019 at 10.00 a.m.** and in the location specified in the Invitation to Tender.

The tenderers' representatives who are present shall sign a register evidencing their attendance.

2.20.2 The tenderers' names, tender modifications or withdrawals, tender prices, discounts and the presence or absence of requisite tender security and such other details as the Procuring entity, at its discretion, may consider appropriate, will be announced at the opening.

2.20.3 The Procuring entity will prepare minutes of the tender opening.

2.21 Clarification of Tenders

2.21.1 To assist in the examination, evaluation and comparison of tenders the Procuring entity may, at its discretion, ask the tenderer for a clarification of its tender. The request for clarification and the response shall be in writing, and no change in the prices or substance of the tender shall be sought, offered, or permitted.

2.21.2 Any effort by the tenderer to influence the Procuring entity in the Procuring entity's tender evaluation, tender comparison or contract award decisions may result in the rejection of the tenderers' tender.

2.22 Preliminary Examination

2.22.1 The Procuring entity will examine the tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the tenders are generally in order.

2.22.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantify, the unit price shall prevail, and the total price shall be corrected. If the candidate does not accept the correction of the errors, its tender will be rejected, and its tender security forfeited. If there is a discrepancy between words and figures the amount in words will prevail

2.22.3 The Procuring entity may waive any minor informality or non-conformity or irregularity in a tender which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any tenderer.

2.22.4 Prior to the detailed evaluation, pursuant to paragraph 2.23 the Procuring entity will determine the substantial responsiveness of each tender to the tender documents. For purposes of these paragraphs, a substantially responsive tender is one, which conforms to all the terms and conditions of the tender documents without material deviations. The Procuring entity's determination of a tender's responsiveness is to be based on the contents of the tender itself without recourse to extrinsic evidence.

2.22.5 If a tender is not substantially responsive, it will be rejected by the Procuring entity and may not subsequently be made responsive by the tenderer by correction of the non-conformity.

2.23 Conversion to Single Currency

2.23.1 Where other currencies are used, the procuring entity will convert these currencies to Kenya Shillings using the selling exchange rate on the date of tender closing provided by the Central Bank of Kenya.

2.24 Evaluation and Comparison of Tenders

2.24.1 The Procuring entity will evaluate and compare the tenders which have been determined to be substantially responsive, pursuant to paragraph 2.22

2.24.2 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.

2.24.3 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

2.25 Preference

2.25.1 Preference where allowed in the evaluation of tenders shall not exceed 15%

2.26 Contacting the Procuring entity

2.26.1 Subject to paragraph 2.21 no tenderer shall contact the Procuring entity on any matter related to its tender, from the time of the tender opening to the time the contract is awarded.

2.26.2 Any effort by a tenderer to influence the Procuring entity in its decisions on tender, evaluation, tender comparison, or contract award may result in the rejection of the Tenderer's tender.

2.27 Award of Contract

(a) Post-qualification

2.27.1 In the absence of pre-qualification, the Procuring entity will determine to its satisfaction whether the tenderer that is selected as having submitted the lowest evaluated responsive tender is qualified to perform the contract satisfactorily.

2.27.2 The determination will take into account the tenderer financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the tenderers qualifications submitted by the tenderer, pursuant to paragraph 2.12.3 as well as such other information as the Procuring entity deems necessary and appropriate.

2.27.3 A positive determination will be a prerequisite for award of the contract to the tenderer. A negative determination will result in rejection of the Tenderer's tender, in which event the Procuring entity will proceed to the next lowest

evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily.

(b) **Award Criteria**

2.27.4 The Procuring entity will award the contract to the successful tenderer(s) whose tender has been determined to be substantially responsive and has been determined to be the lowest evaluated tender, provided further that the tenderer is determined to be qualified to perform the contract satisfactorily.

(c) **Procuring entity's Right to Vary quantities**

2.27.5 The Procuring entity reserves the right at the time of contract award to increase or decrease the quantity of goods originally specified in the Schedule of requirements without any change in unit price or other terms and conditions

(d) **Procuring entity's Right to accept or Reject any or All Tenders**

2.27.6 The Procuring entity reserves the right to accept or reject any tender, and to annul the tendering process and reject all tenders at any time prior to contract award, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the Procuring entity's action

2.28 Notification of Award

2.28.1 Prior to the expiration of the period of tender validity, the Procuring entity will notify the successful tenderer in writing that its tender has been accepted.

2.28.2 The notification of award will constitute the formation of the Contract but will have to wait until the contract is finally signed by both parties

2.28.3 Upon the successful Tenderer's furnishing of the performance security pursuant to paragraph 2.28, the Procuring entity will promptly notify each unsuccessful Tenderer and will discharge its tender security, pursuant to paragraph 2.14

2.29 Signing of Contract

2.29.1 At the same time as the Procuring entity notifies the successful tenderer that its tender has been accepted, the Procuring entity will send the tenderer the Contract Form provided in the tender documents, incorporating all agreements between the parties.

2.29.2 The parties to the contract shall have it signed within **fifteen** (**15) days** from the date of notification of contract award unless there is an administrative review request.

2.29.3 Within **fifteen** (**15) days** of receipt of the Contract Form, the successful tenderer shall sign and date the contract and return it to the Procuring entity.

2.30 Performance Security

2.30.1 Within **fifteen** (**15) days** of the receipt of notification of award from the Procuring entity, the successful tenderer shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to the Procuring entity.

2.30.2 Failure of the successful tenderer to comply with the requirements of paragraph 2.27 or paragraph 2.28 shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security, in which event the Procuring entity may make the award to the next lowest evaluated Candidate or call for new tenders.

2.31 Corrupt or Fraudulent Practices

2.31.1 The Procuring entity requires that tenderers observe the highest standard of ethics during the procurement process and execution of contracts when used in the present regulations, the following terms are defined as follows;

(i) "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public 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 Procuring entity, and includes collusive practice among tenderer (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the Procuring entity of the benefits of free and open competition;

2.31.2 The procuring entity will reject a proposal for award if it determines that the tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

2.31.3 Further a tenderer who is found to have indulged in corrupt or fraudulent practices risks being debarred from participating in public procurement in Kenya.

Appendix to Instructions to Tenderers

The following information regarding the particulars of the tender shall complement supplement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provision of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein shall prevail over those of the instructions to tenderers

Instructions to tenderers reference	Particulars of appendix to instructions to tenders
2.1.5: Eligibility	Open International tender eligible to **To firms who fulfil the following requirements** *Who have Legal Capacity ,Who are not Insolvent ,Those who Fulfilled tax Obligation, Has not been convicted of corrupt or fraudulent*
2.5 Clarification	Clarifications to the tender shall be responded to for request received no later than **5 days** to the tender closing date
2.7 Language of tender	Tender shall be prepared and all corresponded to in English
2.10.2 Tender prices	Prices indicated in the tender price schedule shall include all cost including taxes, insurance and delivery to KenGen.
2.11.1 Tender currencies	Prices shall be in Kenya Shillings, Euro's or US Dollars or otherwise as stated.
2.12 Tender eligibility and qualifications	Proof of eligibility ,qualification documents of evidence (see evaluation criteria)
2.14 Tender security	Bidder **MUST** submit a **Tender Security** in the amount of *USD 3,000 or equivalent from a freely convertible currency in the form of a bank guarantee obtained from a local bank in Kenya. It shall be valid for 30 days beyond the tender validity period.* *The tender security is required to protect the Procuring conduct which would warrant the security's forfeiture, pursuant to paragraph 2.14.7*
2.15 Tender validity	Tender validity duration **120 days** from the date of opening
2.18 Deadline and Submission of Tender	Tender closing date **6th June 2019 at 10.00AM**.
2.23.3	Tender sum as submitted and read out during tender opening is absolute and shall not be subject to correction, adjustment or amendment on any way

2.24 Evaluation Criteria

The bids received shall be evaluated in the stages detailed below:

- Stage 1. Compliance to Mandatory requirement
- Stage 2. Compliance to technical requirements on capacity to deliver the contract.
- Stage 3. Financial evaluation
- Stage 4. Due Diligence where applicable

STAGE 1: MANDATORY REQUIREMENTS

The following mandatory requirements must be met not withstanding other requirements in the tender document:

No	Requirements	Tenderers response
1.	Duly filled, stamped and signed tender form has been submitted	
2.	Duly filled, stamped and signed price schedule has been submitted	
3.	Dully filled and signed Confidential business questionnaire has been submitted for the	
4.	Tender security of **USD 3000** valid for at least **150 days** has been submitted	
5.	Copy of Certificate of incorporation/registration has been submitted for the bidder and for each partner in a joint venture	
6.	Joint Venture agreement has been submitted for joint ventures (for JV's only)	
7.	Power of Attorney in case of Joint Ventures has been submitted (for JV's only)	
8.	Duly signed and stamped Manufacturer's Authorization form	
9.	**Three** duly filled Similar experience record of the firm forms have been submitted	
10.	Dully filled and signed Site visit certificate (	
11	Duly completed Technical Schedule Form	
12	Each page (including blank pages) in the tender offer has unique page numbers which are sequential from first to last page.	
13	**one** original offer and **two** copies of the offer have been submitted	

STAGE 2: TECHNICAL EVALUATION ON CAPACITY TO DELIVER THE CONTRACT

A. BIDDERS OFFER COMPLIANCE TO TECHNICAL SPECIFICATIONS

No	**Description**	**Bidders response**
1	Compliance to circuit breakers technical specifications	
2	Technical datasheets and brochures for circuit breakers offered	
3	Detailed calculations showing suitability of the circuit breakers offered for Masinga Hydro power station .	
4	Submitted programme of works covering all the tasks in the technical specifications, indicating the delivery period.	
5	Warranty period of two years for the circuit breakers and all other equipment supplied, including the commissioning equipment	
6	The Technical Evaluation will be based on compliance with the technical specifications set out in Section V of this tender document and will follow a "PASS/FAIL" evaluation criteria.	

STAGE 3. FINANCIAL EVALUATION

a) Financial evaluation shall involve checking completeness of financial bids

b) Presence of a duly filled, signed and stamped tender form and price schedule

c) Award shall be based on the total lowest evaluated price.

d) Tender sum as submitted and read out during tender opening is absolute and final and shall not be subject to correction, adjustment or amendment major deviation shall result in disqualification

e) This will take into account the bidder's tender price after subjecting the bid to preliminary and technical evaluation

f) The financial evaluation will also take into account, in addition to the tender price and the price of incidental services, the following factors.

g) Deviations in payment schedule from that specified in the Special Conditions of Contract

h) The cost of components, maintenance, and service;At the conclusion of the financial evaluation, KenGen will seek to establish the substantially responsive tender that will be determined to be the lowest evaluated, provided further that the tenderer is determined to be qualified to perform the contract satisfactorily

STAGE 4. DUE DILIGENCE

KenGen may, at its own discretion, conduct due diligence on the eligible bidders to establish their ability to perform the contract at the supplier's premises or otherwise, to ascertain conformance to technical requirements and specifications prior to delivery.
Importing suppliers will be required to provide **Type-Test Certificates** from the country of origin for KenGen's approval prior to delivery

SECTION III:

GENERAL CONDITIONS OF CONTRACT
Table of Clauses

3.1 **Definitions**

3.1.1 In this Contract, the following terms shall be interpreted as indicated:-

(a) "The Contract" means the agreement entered into between the Procuring entity and the tenderer, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

(b) "The Contract Price" means the price payable to the tenderer under the Contract for the full and proper performance of its contractual obligations

(c) "The Goods" means all of the equipment, machinery, and/or other materials, which the tenderer is required to supply to the Procuring entity under the Contract.

(d) "The Procuring entity" means the organization purchasing the Goods under this Contract.

(e) "The Tenderer' means the individual or firm supplying the Goods under this Contract.

3.2 **Application**

3.2.1 These General Conditions shall apply in all Contracts made by the Procuring entity for the procurement installation and commissioning of equipment

3.3 **Country of Origin**

3.3.1 For purposes of this clause, "Origin" means the place where the Goods were mined, grown or produced.

3.3.2 The origin of Goods and Services is distinct from the nationality of the tenderer.

3.4 **Standards**

3.4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

3.5 **Use of Contract Documents and Information**

3.5.1 The tenderer shall not, without the Procuring entity's prior written consent, disclose the Contract, or any provision therefore, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring entity in connection therewith, to any person other than a person employed by the tenderer in the performance of the Contract.

3.5.2 The tenderer shall not, without the Procuring entity's prior written consent, make use of any document or information enumerated in paragraph 3.5.1 above

3.5.3 Any document, other than the Contract itself, enumerated in paragraph 3.5.1 shall remain the property of the Procuring entity and shall be returned (all copies) to the Procuring entity on completion of the Tenderer's performance under the Contract if so required by the Procuring entity

3.6 **Patent Rights**

3.6.1 The tenderer shall indemnify the Procuring entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Procuring entity's country

3.7 **Performance Security**

3.7.1 Within **fifteen (15) days** of receipt of the notification of Contract award, the successful tenderer shall furnish to the Procuring entity the performance security in the amount specified in Special Conditions of Contract.

3.7.2 The proceeds of the performance security shall be payable to the Procuring entity as compensation for any loss resulting from the Tenderer's failure to complete its obligations under the Contract.

3.7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring entity and shall be in the form of a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in Kenya or abroad, acceptable to the Procuring entity, in the form provided in the tender documents.

3.7.4 The performance security will be discharged by the Procuring entity and returned to the Candidate not later than thirty (30) days following the date of completion of the Tenderer's performance obligations under the Contract, including any

3.7.5 obligations, under the Contract

3.8 **Inspection and Tests**

3.8.1 The Procuring entity or its representative shall have the right to inspect and/or to test the goods to confirm their conformity to the Contract specifications. The Procuring entity shall notify the tenderer in writing in a timely manner, of the identity of any representatives retained for these purposes.

3.8.2 The inspections and tests may be conducted in the premises of the tenderer or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring entity.

3.8.3 Should any inspected or tested goods fail to conform to the Specifications, the Procuring entity may reject the equipment, and the tenderer shall either replace the rejected equipment or make alterations necessary to make specification requirements free of costs to the Procuring entity.

3.8.4 The Procuring entity's right to inspect, test and where necessary, reject the goods after the Goods' arrival shall in no way be limited or waived by reason of the equipment having previously been inspected, tested and passed by the Procuring entity or its representative prior to the equipment delivery.

3.8.5 Nothing in paragraph 3.8 shall in any way release the tenderer from any warranty or other obligations under this Contract.

3.9 **Packing**

3.9.1 The tenderer shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract.

3.9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract

3.10 **Delivery and Documents**

3.10.1 Delivery of the Goods shall be made by the tenderer in accordance with the terms specified by Procuring entity in its Schedule of Requirements and the Special Conditions of Contract

3.11 **Insurance**

3.11.1 The Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacturer or acquisition, transportation, storage, and delivery in the manner specified in the Special conditions of contract.

3.12 **Payment**

3.12.1 The method and conditions of payment to be made to the tenderer under this Contract shall be specified in Special Conditions of Contract

3.12.2 Payments shall be made promptly by the Procuring entity as specified in the contract

3.13 Prices

3.13.1 Prices charged by the tenderer for goods delivered and services performed under the Contract shall not, with the exception of any price adjustments authorized in Special Conditions of Contract, vary from the prices by the tenderer in its tender.

3.13.2 Contract price variations shall not be allowed for contracts not exceeding one year (12 months)

3.13.3 Where contract price variation is allowed, the variation shall not exceed 25% of the original contract price.

3.13.4 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.

3.14. Assignment

3.14.1 The tenderer shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring entity's prior written consent

3.15 Subcontracts

3.15.1 The tenderer shall notify the Procuring entity in writing of all subcontracts awarded under this Contract if not already specified in the tender. Such

notification, in the original tender or later, shall not relieve the tenderer from any liability or obligation under the Contract

3.16 Termination for default

3.16.1 The Procuring entity may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the tenderer, terminate this Contract in whole or in part

(a) if the tenderer fails to deliver any or all of the goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring entity

(b) if the tenderer fails to perform any other obligation(s) under the Contract

(c) if the tenderer, in the judgment of the Procuring entity has engaged in corrupt or fraudulent practices in competing for or in executing the Contract

3.16.2 In the event the Procuring entity terminates the Contract in whole or in part, it may procure, upon such terms and in such manner as it deems appropriate, equipment similar to those undelivered, and the tenderer shall be liable to the Procuring entity for any excess costs for such similar goods.

3.17 Liquidated Damages

3.17.1. If the tenderer fails to deliver any or all of the goods within the period(s) specified in the contract, the procuring entity shall, without prejudice to its other remedies under the contract, deduct from the contract prices liquidated damages sum equivalent to 0.5% of the delivered price of the delayed items up to a maximum deduction of 10% of the delayed goods. After this the tenderer may consider termination of the contract.

3.18 Resolution of Disputes

3.18.1 The procuring entity and the tenderer shall make every effort to resolve amicably by direct informal negotiation and disagreement or dispute arising between them under or in connection with the contract

3.18.2 If, after thirty (30) days from the commencement of such informal negotiations both parties have been unable to resolve amicably a contract dispute, either

party may require adjudication in an agreed national or international forum, and/or international arbitration.

3.19 Language and Law

3.19.1 The language of the contract and the law governing the contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

3.20 Force Majeure

3.20.1 The tenderer shall not be liable for forfeiture of its performance security or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

3.21 Taxes

3.21.1 **"Taxes"** means all present and future taxes, levies, duties, charges, assessments, deductions or withholdings whatsoever, including any interest thereon, and any penalties and fines with respect thereto, wherever imposed, levied, collected, or withheld pursuant to any regulation having the force of law and "Taxation" shall be construed accordingly.

3.21.2 **Local Taxation**

Nothing in the Contract shall relieve the Contractor and/or his Sub-Contractors from their responsibility to pay any taxes, statutory contributions and levies that may be levied on them in Kenya in respect of the Contract. The Contract Price shall include all applicable taxes and shall not be adjusted for any of these taxes.

3.21.3 The Contractor shall be deemed to be familiar with the tax laws in the Employer's Country and satisfied themselves with the requirements for all taxes, statutory contributions and duties to which they may be subjected during the term of the Contract.

3.21.4 In instances where discussions are held between the Employer and the Contractor regarding tax matters, this shall not be deemed to constitute

competent advice and hence does not absolve the Contractor of their responsibility in relation to due diligence on the tax issue as per 3.21.2 above.

Tax Deduction

3.21.5 If the Employer is required to make a tax deduction by Law, then the deduction shall be made from payments due to the Contractor and paid directly to the Kenya Revenue Authority. The Employer shall upon remitting the tax to Kenya Revenue Authority furnish the Contractor with the relevant tax deduction certificates.

3.21.6 Where the Contractor is paid directly by the Financiers and the Employer is not able to deduct tax, then the Contractor will be required to pay the tax deduction to Kenya Revenue Authority in the name of the Employer and furnish the Employer with an original receipt thereof as evidence of such payment. In absence of the said evidence, the Employer will not process any subsequent payments to the Contractor.

Tax Indemnity

3.21.7 The Contractor shall indemnify and hold the Employer harmless from and against any and all liabilities, which the Employer may incur for any reason of failure by the Contractor to comply with any tax laws arising from the execution of the Contract whether during the term of the Contract or after its expiry.

3.21.8 The Contractor warrants to pay the Employer (within fourteen (14) days of demand by the Employer), an amount equal to the loss, liability or cost which the Employer determines has been (directly or indirectly) suffered by the Employer for or on account of the Contractor's Tax liability arising from the Contract.

3.21.9 Where the amount in 3.21.8 above remains unpaid after the end of the fourteen (14) days moratorium, the Employer shall be entitled to compensation for financing charges.

SECTION IV

SPECIAL CONDITIONS OF CONTRACT

4.1. Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, between the GCC and the SCC, the provisions of the SCC herein shall prevail over these in the GCC.

42. Special conditions of contract as relates to the GCC

REFERENCE OF GCC		SPECIAL CONDITIONS OF CONTRACT
3.17.1	**Performance Security**	Indicate Particulars of Performance Security: Performance Security shall be 10% of Contract Amount. In case the Tender is not fully or well executed performance security shall unconditionally be fully seized.
3.8.5	**Warranty**	The supplier shall be required to expressly confirm that the goods supplied shall be under 24 month's warranty.
3.12	**Terms of payment**	Advance payment shall not be applicable Payment shall be made within 30 days from the date of receipt of certified invoices, delivery notes; goods receipt notes and signing of satisfactory and acceptance report by the engineer.
	Delivery terms	Delivery terms for local suppliers are Delivered Duty Paid – Masinga Power Station (INCOTERMS 2010)
	Pre-shipment inspection	➢ All consignments subject to Pre-Export Verification of Conformity (PVoC) to Standards Programme must obtain a Certificate of Conformity (CoC) issued by PvoC Country Offices Prior to shipment. The Certificate is a mandatory Customs Clearance document in Kenya; ➢ Consignments arriving at Kenyan Ports without this document will be denied entry into the Country. ➢ Since PVoC is a conformity assessment process to verify that products imported to Kenya are in compliance with the applicable Kenya standards or approved equivalents, regulations and technical requirements before shipment, it is the sole responsibility of the supplier (i.e. exporter) to demonstrate the same and hence meet any associated costs of verification.
3.18.2	**Dispute Resolution**	Arbitration where necessary shall be by the Chartered Institute of Arbitrators Kenya Chapter

SECTION VI

TECHNICAL SPECIFICATIONS FOR MASINGA GENERATOR CIRCUIT BREAKERS

1. INTRODUCTION

Masinga Hydro Power Station was commissioned in 1981, with two generating units each rated 23.53MVA. Each generator generates power at a voltage of 11 kV and is connected to a 25 MVA 11/132 kV step-up transformer via a Generator Circuit Breaker (GCB) and to a 0.63 MVA 11/0.415 kV step-down transformer via an Auxiliary Circuit Breaker (ACB). For each generating unit, the GCB and ACB in use are rackable (withdrawable) and integrated into one unit (not separate stand-alone equipment). Each step-up transformer is connected to a 132-kV transmission line of the National Grid via a circuit breaker and an isolator (disconnector switch).

Currently, one generating unit is still using the original oil-based GCB and ACB installed in 1981, while the other is using a vacuum-based GCB and ACB installed later. KenGen seeks to replace both GCBs and ACBs with new vacuum-based equivalents to reduce maintenance costs and improve reliability of the power station

1. APPLICABLE STANDARDS

The circuit breakers shall be designed manufactured and tested according to the following international standards:

- IEC 62271 set of standards (including IEC 62271-1, IEC 62271-100, IEC 62271-200 and IEC/IEEE 62271-37-013)
- IEC 61869-1, IEC 61869-2, IEC 61869-3
- IEC 60529
- IEC 60071
- ISO 9001
- ISO 14001
- ISO 45001

The Type test reports or certificates to be submitted with this tender shall be certified by an EU/USA/Canadian National Standards and Testing Authority (NSTA) or by a third party (not manufacturer or manufacturer subsidiary) reputable testing authority accredited by a EU/USA/Canadian National Standards and Testing Authority (NSTA) for:

- MV Generator circuit breakers type tests in accordance to IEEE C37.013 or IEC/IEEE 62271-37-013 (2 summary reports/certificates)
- MV Generator switchgear (complete switchgear) as per IEC62271-200 (3 summary reports/certificates)

KenGen reserves the right to contact the certifying testing authority to verify the certificates. Delays by the testing authority to verify the certificate will be to the detriment of the respective bidder.

2. SCOPE

The scope of the project shall be as follows:

A. Detailed calculations to determine the suitability of the technical specifications of the Circuit Breakers offered to application in Masinga Power Station
B. Design, manufacture, factory acceptance testing, supply and delivery to Masinga Power Station (DAP) of **one set of Generator Circuit Breaker** and **Station Transformer Circuit Breaker** and associated structures, fittings and fixtures.
C. Factory training and testing of the circuit breaker
D. Supervision of installation, site acceptance tests and commissioning of one set of Generator Circuit Breaker and Auxiliary Circuit Breaker.
E. Supply and delivery to Masinga Power Station of all specified spares

3. SERVICE CONDITIONS/ APPLICATION

Type of Power Station	Hydro	
Service Conditions	Site altitude (mASL)	1,013
	Minimum Ambient Temperature (°C)	28
	Maximum Ambient Temperature (°C)	40
	Relative Humidity (%)	80
Installation	Indoor	
Limiting Dimensions at Installation Site	Room with dimensions (l*w*h) 6400 X 2750 X 4200mm	
Minimum and Maximum Phase Spacing	Incoming from Generator to GCB – 22 cm between adjacent phases	
	Outgoing to Main TX from GCB – 22 cm between adjacent phases	
	Outgoing to Auxiliary TX from ACB – 15 cm between adjacent phases	
Interlocks and Key Coordination Systems	The 11 kV GCB is interlocked with a 132 kV Busbar Circuit Breaker that connects the Step-up Transformer to the Grid via a 132 kV Isolator	
	The 132 kV Busbar CB is itself interlocked with the 132 kV Isolator	
Type of Bus between Generator and Main Transformer	Between Generator and GCB: cables	
	Between GCB and Main TX: solid copper bars and cables	
	Between ACB and Aux TX: cables	
Fault Level at 132 kV busbars	1,418 MVA +/- 2%	
Load rejection withstand capability according to IEC 60076-1	1.4 times rated generator voltage for 5 seconds, i.e. 15.4 kV	
Station's Single-line diagram	See Appendix attached	

4. EXISTING EQUIPMENT DATA

4.1. Generator

Generator	
Description	**Parameter**
Rated Power (MVA)	23.53
Rated Voltage (kV)	11
Voltage Limits (%)	±5
Rated Power Factor	0.85
Rated Frequency (Hz)	50
Rated Speed (rpm)	300
Rated Armature Current (A)	1,233
Rated Excitation Current (A)	1,280
Rated Excitation Voltage (V)	108
Stator Insulation Class	B
Rotor Insulation Class	B
Standard	VDE 0530 part 1 (1972); IEC 34-1 (1969)
Flywheel Effect (GD^{-1}) in MNm^2	5.12
Cooling	Air-cooled in closed circuit
Inlet Coolant Temperature Air	40 °C
Synchronous reactance, unsaturated	X_d – 0.90 pu
Transient reactance, unsaturated	X'_d – 0.25 pu
Sub-transient reactance , saturated	X''_d – 0.17 pu
Time constants (at 75 °C)	
Transient short-circuit time constant	T'_d – 1.2 s
Sub-transient short-circuit time constant	T''_d – 0.04 s
Open-circuit time constant	T'_{do} – 4.1 s
Short-circuit time constant	T_a – 0.17 s
Armature winding leakage reactance, unsaturated, x_a	0.135 pu
Negative phase sequence reactance, unsaturated, x_2	0.19 pu
Negative phase sequence reactance, saturated, x_2	-
Zero sequence reactance, unsaturated, x_0	0.09 pu
Short-circuit ratio	1.2
Maximum asymmetric short-circuit peak value of current with open-circuit excitation and rated voltage (kA)	18.5
Steady short-circuit current with three phases shorted (kA)	2.65
Steady short-circuit current with two phases shorted (kA)	3.8
Unsymmetrical load: maximum permissible steady opposing component of current	$0.3 \times I_N$
Voltage change with power factor ($\cos \varphi$) = 0.85	25 %

Voltage change with cos φ = 1	16 %
Stator winding resistance per phase at 20 °C (Ω)	0.0148
Rotor winding resistance at 20 °C (Ω)	0.058
Stator winding capacitance between each phase and the iron core (μF)	0.2
Stall torque three phase by rated voltage (Kpm)	590,738
Weight in tonnes of generator (finished, assembled, ready for operation)	138
Weight in tonnes of stator (without covers and coolers)	45
Weight in tonnes of complete rotor	71
Armature short-circuit time constant, T_a	0.155 s
Moment of inertia	201600kgm^2
Generator Capability Curve	See Appendix attached
Generator Earthing Method	Neutral Earthing Transformer
Surge Arrestors	None

4.2.Main Step-up Transformer

Main Step-up Transformer		
Description	**Parameter**	
Manufacturer	EMCO Ltd.	
Year of Manufacture	2006-2007	
Serial No.	HT 1705/12613	
Place of Manufacture	Thane, Maharashtra (India)	
Specification Ref. No.	IEC 60076	
Phases	3	
Rated Power	25,000 kVA	
Frequency	50 Hz	
Rated Voltage at No Load	HV	143.7 kV
	LV	11 kV
Rated Line Current	HV	100.44 A
	LV	1,312.16 A
Vector Group	YNd1	
Guaranteed Max. Temp. Rise	Top Oil	35 °C
	Winding	40 °C
Reference Ambient Temp.	45 °C	
Insulation Level	HV kV	LI 650/AC 275
	HV_N kV	LI 125/AC 50
	LV kV	LI 170/AC 70
Core & Windings Mass	20,500 kg	
Tank & Fittings Mass	11,500 kg	
Mass of Oil	12,000 kg	
Total Mass	44,000 kg	
Transport Mass (gas-filled)	28,000	

Volume of Oil	13,500 litres			
Untanking Mass	22,700 kg			
Tap Changer on HV	Tap No.	Line V (V)	Line I (A)	
	1 (max.)	158,070	91.31	
	2	154,477.5	93.44	
	3	150,885	95.66	
	4	147,292.5	98	
	5 (nom.)	143,700	100.44	
	6	140,107.5	103.02	
	7 (min.)	136,515	105.73	
Impedance Voltage HV—LV	Tap 1 (max.)	13.604 %		
	Tap 5 (nom.)	13.036 %		
	Tap 7 (min.)	12.794 %		
Current Transformers' Details	Phase	CTR	Bu(VA)	Use
	HV_{UVW}	125/1	30	Diff P
	HV_{UVW}	125/1	15	O/C P
	HV_{UW}	125/1	7.5	Meter
	HV_{N}	125/1	30	REF P
	LV_{UW}	1312/1.8	20	WTI
Type of Cooling	Oil Directed Air Forced			
Air Circulation (Oil Coolers)	Running	1 × 250 kW		
	Standby	1 × 250 kW		
Oil Circulation (Pumps)	Running	1 × 2500 lit/min		
	Standby	1 × 2500 lit/min		

4.3. Station Transformer

Station Transformer			
Description	**Parameter**		
Manufacturer	GEC Distribution Transformers Ltd.		
Year of Manufacture	1980		
Serial No.	78188/12		
Place of Manufacture	Broadstairs, Kent (U.K.)		
Standard	BS 171/1970		
Phases	3		
Rated Power	630 kVA		
Frequency	50 Hz		
Rated Voltage at No Load (normal tap)	HV	11,000 V	
	LV	433 V	
Rated Line Current (normal tap)	HV	33.10 A	
	LV	840 A	
Vector Group	Dy11		
Core & Windings Mass	1.32 tonnes		
Mass of Oil	1.448 tonnes		
Total Mass	4.60 tonnes		
Type of Tap Changer	On-load		
Tap Changer on HV	Tap No.	Line V (V)	Line I (A)

	1 (max.)	12,100.0	30.06
	2	11,962.5	30.41
	3	11,825.0	30.76
	4	11,687.5	31.12
	5	11,550.0	31.49
	6	11,412.5	31.87
	7	11,275.0	32.26
	8	11,137.5	32.66
	9 (nom.)	11,000.0	33.07
	10	10,862.5	33.48
	11	10,725.0	33.91
	12	10,587.5	34.35
	13	10,450.0	34.81
	14	10,312.5	35.27
	15	10,175.0	35.75
	16	10,037.5	36.24
	17 (min.)	9,900.0	36.74
Impedance Volts	5.14 %		

5. PANEL SPECIFICATIONS

5.1. General specifications

The switchboard shall have the following specifications:

- Internal arc classification – IAC A FLR 49kA 1s
- Endurance class E2, M2 (10,000), C2
- Loss of service continuity – class 2B i.e. LSC 2B
- Partition class PM

5.2. Panel Construction

The switchboard shall be *free standing* and made of g*alvanized* metal sheets. The exterior shall be painted *light grey* in colour (RAL 7035), while the separating sheets must be galvanized and rust free.

The GCB cubicle shall be designed to facilitate adequate *ventilation* and *natural cooling by air* of the interior components.

The switchboard shall have the following panels, namely:

- Generator circuit breaker panel
- Station transformer circuit breaker panel
- Main transformer outgoing feeder panel

These panels shall be erected adjacent to each other to form one switchboard. The cable entry to the individual panels shall be from the bottom. Suitable glanding plate shall be provided for glanding of the power cables connecting the switchboard to the generator, main and station transformers.

Each of the above panels shall have the following compartments:

- Busbar compartment
- Low voltage compartment

- Cable connection compartment
- Circuit breaker compartment

The specifications for the various compartments are as specified below.

5.3. Busbar compartment

- Shall be rated at 2500A, 50kA.
- Busbars shall be made of insulated copper and bolted from panel to panel
- Shutters shall be opened and locked separately
- There shall be bushing type insulators for supporting the busbars.
- The 11 kV busbar shall extend from the GCB to the Auxiliary Circuit Breaker (see next section for specifications) through an adjacent cubicle between them.

5.4. Low voltage compartment

- This compartment shall house all low-voltage connections to the control circuits. The terminal blocks shall be mounted on universal din rail.
- All circuit breaker contacts shall be brought to this compartment whether used or unused.
- The wires shall be neatly laid in trunking with covers and appropriate wire protection on the swing door.
- There shall be a multi-function meter mounted on the compartment door for display of electric power measurements namely current, voltage, frequency and instantaneous power (active, reactive and apparent power).
- The compartment have a *front door* that opens to allow access to the circuit components. A *single phase switched power outlet* of British standard BS 1363 shall be provided in this part.
- On the door there shall be *a multifunction meter* that measure voltage and current shall be mounted on this front door:
- On the door there shall also be a *selector switch* to select operation mode of the GCB (local or remote)

5.5. Cable connection compartment

- Cable entry or exit shall be bottom entry for the three panels.
- Safety Shutters installed, lockable, with padlock, from the CB compartment
- 11 kV cables from the Generator shall enter the main section from *below*. The 11 kV cables from the GCB to the Main Step-up Transformer shall exit the main section from *below*. The cable entry shall be accessible from the back of the main lower part.

5.6. Circuit breaker compartment

- Integrated mimic diagram
- Manual racking of the circuit breaker
- Supplied with service trolley
- Suitable and robust low-voltage plug connector.

- The GCB shall be contained in a cubicle that will have two sections: the *main lower part* housing the rackable component consisting of the pole assemblies and the operating mechanism
- The main lower part shall have a *front door* with an *inspection window* through which the indicators showing the position of the contacts and the status of the spring are visible. On the door there shall be mounted two *pushbuttons* for operating the GCB: open and close.

6. PANEL COMPONENTS

6.1. Circuit breakers

6.1.1. Pole assemblies

- The pole assemblies shall consist of the *vacuum interrupters* and the *interrupter supports*.
- The vacuum interrupters shall be *easily accessible* and *air-insulated* to facilitate inspection.
- There shall be an *upper interrupter support* and a *lower interrupter support*. The vacuum interrupter shall be rigidly fixed to the upper interrupter support, and connected to the lower interrupter support in a manner that allows axial movement.
- *Braces* shall link the two interrupter supports to provide mechanical robustness required to withstand the contact pressures and switching operations.
- The distance between pole centres shall be at least 210 mm.

6.1.2. Operating mechanism box

- The operating mechanism box contains all the elements of the operating mechanism of the GCB, including the releases, auxiliary switches, indicators and actuating devices. This box shall be designed in such a way that these elements shall be easily accessible.
- The GCB shall have a *spring-operated mechanism* with *stored-energy capability*. There shall be two springs: *closing spring* and *opening (contact) spring*.
- There shall be two ways of charging these springs: *manual* (by hand using a lever) and *automatic* (by electrical motor). The electric motor used for spring charging shall operate using the auxiliary supply voltage (110 V DC) and shall have short circuit MCB and fuse protection.
- After charging the closing spring, the GCB shall be ready to perform a close operation. While the close operation is being performed and the closing spring is discharged, the opening spring shall be charged *simultaneously*, so as to store energy needed for an open operation when the need arises. The discharged closing spring shall then be charged automatically by the motor, or manually by the operator.
- Both springs shall be *latched* at the end of their charging processes, and unlatched by the corresponding GCB operation: closing spring unlatched by a close operation, and opening spring by an open operation.
- There shall be two ways of unlatching the springs: either *mechanically* via a push button, or *electrically* via a solenoid that receives a remote signal.
- The *shunt releases* used to facilitate remote operation of the GCB by electrical signals shall be suitable for DC voltage. There shall be two releases responsible for the opening operation, and one responsible for the closing operation.
- The GCB shall be designed to be *maintenance-free* under normal ambient conditions, according to IEC 62271-1 and IEC 62271-100. Up to 10,000 operations, the GCB shall require no relubrication or readjustment, and in addition, its characteristics shall within their

tolerances remain independent of the switching rate or of standing (idle) times without switching operations.

6.1.3. Ingress Protection

The switchboard shall have at least *IP 51* classification against ingress of water and dust.

6.1.4. Circuit Breaker Controls

- The GCB shall have a *trip-free mechanism* according to IEC 62271-100. If an operation (say close) is initiated and then immediately the GCB gets a command to perform the opposite operation (open), the close operation being initiated is suspended, i.e. the moving contacts return to their previous open position. This shall be the case even if the command for the initial operation is sustained.
- There shall be a *lock-out* mechanism that protects the GCB from mal-operation in the event of loss of auxiliary supply or damage to the vacuum interrupters (loss of vacuum). When auxiliary supply is present and the vacuum is intact, the closing lock-out mechanism permits operation of the GCB. When there is no auxiliary supply present or the vacuum is damaged, the lock-out prevents mechanical operation of the GCB, whether electrically (remote) or manually (local). The operating voltage of the electrical closing lock-out shall be the same as that of the closing solenoid of the release.
- There shall be an *anti-pumping* mechanism that protects the GCB from continuous close-open operations. In a scenario where the GCB receives both close and open commands simultaneously and the commands are sustained, the GCB shall close, then open, and remain in the open position until a new close command is given.
- There shall be an *interlocking* mechanism that further protects the GCB from mal-operation. The GCB shall be appropriately interlocked with the 132 kV Isolator to prevent the GCB's closure if the Isolator is open. The front door shall be *lockable* with a padlock. All switching operations should be permitted only when the compartment door is closed.
- The GCB shall have *auxiliary contacts* that will be used for multiple purposes including indication of the status of the contacts (open or closed) and status of the spring (charged or discharged). There shall be a minimum of 20 auxiliary contacts of which 10 shall be normally open contacts and the other 10 normally closed contacts. There shall also be *voltage-free contacts* for monitoring of the operating mode selection, pole discrepancy, spring charge supply failure, spring charging function failure (timed).

6.2. Circuit Breaker Rating

6.2.1. Generator Circuit Breaker Rating

Description		**Details**
Rated maximum voltage U_r (kV)		12
Rated insulation level	Power frequency withstand voltage, U_d (kV_{rms})	28
	Lightning impulse withstand voltage, U_p (kV_{peak})	75
Rated power frequency, f_r (Hz)		50
Rated normal current, I_r (A)		2000
Temperature rise (°C)	Parts handled by operator in the normal course of work	Max. 50

	External surfaces accessible to the operator in the normal course of work	Max. 70
	External surfaces inaccessible to the operator in the normal course of work	Max. 110
Rated short-time withstand current, I_k (kA_{rms})		40
Rated peak withstand current, I_p (kA_{peak})		86.31
Rated duration of short-circuit, t_k (s)		1
Rated supply voltage of closing and opening devices and of auxiliary and control circuits, U_a (V)		110 DC
Permissible supply voltage range for closing and auxiliary functions		90-140 DC
Permissible supply voltage range for tripping functions		70-140 DC
Rated short-circuit current	Rated system-source short-circuit breaking current, I_{sc}	
	Rated generator-source short-circuit breaking current, I_{scg}	Within 110 % degree of asymmetry
	Rated single-phase-to-earth fault breaking current (A)	50
Rated peak short-circuit making current, I_{MC}		$2.74 \times I_{sc}$
Rated load making and breaking current		
Rated out-of-phase making and breaking current		$0.5 \times I_{sc}$
Rated transient recovery voltage (TRV) related to the breaking currents	TRV parameters for system-source faults	TX rating 25 MVA; time $0.58U_r$ µs; TRV peak value $1.84U_r$ kV; Rate of Rise of Recovery Voltage (RRRV) 3.2 kV/µs; time delay 1 µs
	TRV parameters for generator-source faults	TX rating 25 MVA; time $1.23U_r$ µs; TRV peak value $1.84U_r$ kV; RRRV 1.5 kV/µs; time delay 0.5 µs
	TRV parameters for load current switching	TX rating 25 MVA; time $1.03U_r$ µs; TRV peak value $0.92U_r$ kV; RRRV 0.9 kV/µs; time delay 1 µs
	TRV parameters for out-of-phase current switching	TX rating 25 MVA; time $0.87U_r$ µs; TRV peak value $2.6U_r$ kV; RRRV 3.0 kV/µs; time delay 1 µs
Standard operating sequence		CO – 30 min – CO
Excitation switching current		-
Rated time quantities	Opening time (no-load) (ms)	
	Break time (ms)	60 - 90
	Closing time (no-load) (ms)	
	Close-open time (no-load) (ms)	
Mechanical operation endurance capability class		M1000
Arc-quenching medium		Vacuum
Basic design and application philosophy		Custom
Number of Tripping Coils		2

Number of Closing Coils	1
Cooling	Air natural
Voltage range factor (K)	1

6.2.2. Station Transformer Circuit Breaker Rating

Description		**Details**
Rated maximum voltage U_r (kV)		12
Rated insulation level	Power frequency withstand voltage, U_d (kV_{rms})	28
	Lightning impulse withstand voltage, U_p (kV_{peak})	75
Rated power frequency, f_r (Hz)		50
Rated normal current, I_r (A)		1250
Temperature rise (°C)	Parts handled by operator in the normal course of work	Max. 50
	External surfaces accessible to the operator in the normal course of work	Max. 70
	External surfaces inaccessible to the operator in the normal course of work	Max. 110
Rated short-time withstand current, I_k (kA_{rms})		25
Rated peak withstand current, I_p (kA_{peak})		68.5
Rated duration of short-circuit, t_k (s)		Min. 1
Rated supply voltage of closing and opening devices and of auxiliary and control circuits, U_a (V)		110 DC
Permissible supply voltage range for closing and auxiliary functions		90-140 DC
Permissible supply voltage range for tripping functions		70-140 DC
Rated short-circuit current	Rated system-source short-circuit breaking current, I_{sc}	
	Rated generator-source short-circuit breaking current, I_{scg}	Within 110 % degree of asymmetry
	Rated single-phase-to-earth fault breaking current (A)	50
Rated peak short-circuit making current, I_{MC}		$2.74 \times I_{sc}$
Rated load making and breaking current		
Rated out-of-phase making and breaking current		$0.5 \times I_{sc}$
Rated transient recovery voltage (TRV) related to the breaking currents	TRV parameters for system-source faults	TX rating 25 MVA; time $0.58U_r$ µs; TRV peak value $1.84U_r$ kV; Rate of Rise of Recovery Voltage (RRRV) 3.2 kV/µs; time delay 1 µs
	TRV parameters for generator-source faults	TX rating 25 MVA; time $1.23U_r$ µs; TRV peak value $1.84U_r$ kV; RRRV

		1.5 kV/µs; time delay 0.5 µs
	TRV parameters for load current switching	TX rating 25 MVA; time $1.03U_r$ µs; TRV peak value $0.92U_r$ kV; RRRV 0.9 kV/µs; time delay 1 µs
	TRV parameters for out-of-phase current switching	TX rating 25 MVA; time $0.87U_r$ µs; TRV peak value $2.6U_r$ kV; RRRV 3.0 kV/µs; time delay 1 µs
Standard operating sequence		CO – 30 min – CO
Excitation switching current		-
Rated time quantities	Opening time (no-load) (ms)	
	Break time (ms)	60 - 90
	Closing time (no-load) (ms)	
	Close-open time (no-load) (ms)	
Mechanical operation endurance capability class		M1000
Arc-quenching medium		Vacuum
Basic design and application philosophy		Custom
Number of Tripping Coils		2
Number of Closing Coils		1
Cooling		Air natural
Voltage range factor (K)		1

6.3. Current transformers

- There shall be two sets of current transformers (CTs) installed on the generator side and station transformer side in the respective panels.
- The CTs shall be the block type insulated by use of cast resin.
- The general specifications for all CTs shall be as follows:

Parameter	Value
Operating Voltage	11kV
Power Frequency withstand	38kV
Lighting Impulse withstand	75kV

- The CTs for measuring the generator current shall be positioned before the circuit breaker
- For the generator, the specifications for CT1 is as shown below:

Parameter	Core 1	Core 2	Core 3
Function	Protection	Metering	Differential Protection
Ratio	1500:1	1500:1	1500:1
Accuracy Class	5P20	0.2S	5P20
Burden	20VA	15VA	20VA

- For the generator, the specifications for CT2 is as shown below:

Parameter	Core 1	Core 2	Core 3
Function	Measuring	Protection	Differential Protection
Ratio	1500:1	1500:1	1500:1
Accuracy Class	0.5	5P20	5P20
Burden	15VA	20VA	20VA

- The
  CTs for the station transformer shall be positioned after the circuit breaker towards the station transformer.
- For the Station transformer the specifications of the CTs are as shown below:

Parameter	Core 1	Core 2	Core 3	Core 4
Function	Protection	Protection	Differential Protection	Differential Protection
Ratio	40:1	100:1	1500:1	1500:1
Accuracy Class	5P20	5P20	5P20	5P20
Burden	20VA	20VA	20VA	20VA

6.4. Voltage transformers

- The voltage transformer (VT) shall conform to the following standards: IEC 61869-1 and IEC 61869 – 3
- The VTs shall be block type made of Cast resin, insulated and shall be installed on per phase basis.
- The VTs shall be fixed and non-withdrawable, with primary fuses on the high voltage side for isolation purposes.

Parameter	Value
Operating Voltage	11kV
Power Frequency withstand	38kV
Lighting Impulse withstand	75kV

- The VTs shall be installed on the busbar side of the GCB and ACB (outgoing feeder) panels, preferably in the Main transformer feeder panel.
- Each of the above cores shall have a miniature circuit breaker installed in the LV compartment for proper isolation and with appropriate protection rating.

- Specifications are for VT1 are

Parameter	Core 1	Core 2
Configuration	Star/Star	Star/Open Delta
Primary Rating (V AC)	11000/√3 V AC	11000/√3 V AC
Secondary Voltage (V AC)	110/√3 V AC	110/√3 V AC
Burden	30VA	30VA
Number of Outputs	2	1
Accuracy class:	3P	

- The specifications for VT2 are below:

Parameter	Core 1
Primary Rating (V AC)	11000V AC
Secondary Voltage (V AC)	110V AC
Burden	30VA
Accuracy class:	0.2

6.5.Busbar

- The switchboard shall share a *common* busbar extending from the GCB panel to the Transformer Feeder panel.
- The busbar shall be a 3-phase busbar operating at a maximum voltage of 12kV rated at 2500A, 50kA and 50 Hz.
- The busbar shall connect the generator and station transformer to the Main Step-up Transformer through the respective circuit breakers. Busbars shall be bolted from panel to panel while the shutters shall be opened and locked separately to ensure safety while working.
- The busbar shall meet the international *BS EN 60439-2* standard requirements.
- The busbar shall be made of *copper* and shall be appropriately insulated.
- .There shall be bushing type insulators for supporting the busbars.

6.6. Panel meter

- There shall be a digital multi-function meter mounted on the LV compartment of the panel. The meter shall be of size 96 x 96 mm with an LCD display.
- Each panel (GCB & ACB) shall have one multifunction meter for the following parameters: currents, voltages- both phase and line, frequency, Power – instantaneous, average, per, phase measurements
- The meter shall have universal power supply i.e. (ac: 100 to 240 V ac, 50 to 60 Hz; dc: 110 to 300 V)
- The inputs to the meter shall be voltage and current transformers installed in the respective panels. The meter supports 3-phase 4-wire, 3-Phase 3-wire, 3 Wire / 1 Phase, 2 Wire.
- The current input range shall be 0-1A, the voltage input range shall be 20-300V ac while the frequency range shall be 45-55Hz.

6.7. Indication and control devices

- There shall be a **Trip-Neutral-Close (TNC)** switch installed on the LV compartment of the panel. The TNC switch shall operate the breaker when the control of the breaker is selected "**LOCAL**". This switch shall be installed on both GCB and ACB panels.
- There shall be a **"LOCAL" "REMOTE**" selector switch for the selection of the operation mode of the breaker. The breaker shall be key switch operated and shall be mounted on the LV compartment. The "REMOTE" selection shall transfer the control of the circuit breakers to the unit control system or from a switch installed in a remote location. This switch shall be installed on both the GCB and ACB panels.

- There shall be **an analogue voltmeter** installed on the panel for indication of running voltage from the VT installed on the busbar. The voltmeter shall have an integrated switch for indication of line voltage by selection. This voltmeter shall be mounted on the LV compartment of the GCB.
- There shall be **LED lamp indications** mounted on the door of the low voltage compartment of each panel – GCB and ACB - as follows:
    - DC Voltage OK (Red),
    - CB Isolated(/withdrawn) (Green),
    - CB Closed (Red),
    - CB Open (Green),
    - CB Fault (Amber)

  These indications shall be of diameter 22mm.

- The alarms/faults and conditions to be annunciated via the CB "FAULT" indication shall be as directed by KenGen engineer upon during design stage.
- These shall be a **nameplate** that shall be *metallic* and *located on the front door* of the main section of the GCB and ACB panels.
- The nameplate shall contain but not be limited to the following information from the manufacturer in the units specified:
    i. Manufacturer name
    ii. Type designation and serial number
    iii. Rated voltage (kV_{rms})
    iv. Rated power frequency withstand voltage (kV_{rms})
    v. Rated lightning withstand impulse voltage (kV_{peak})
    vi. Rated frequency (Hz)
    vii. Rated normal current (A_{rms})
    viii. Rated short-time withstand current (kA_{rms})
    ix. Rated duration of short-circuit (s)
    x. Rated short-circuit making current (kA_{peak})
    xi. Rated load making and breaking current (A_{rms})
    xii. Rated voltage of auxiliary and control circuits (V)
    xiii. Rated current of auxiliary and control circuits (A)
    xiv. Rated break time (ms)
    xv. Rated make time (ms)
    xvi. Mass (kg)
    xvii. Standard operating sequence
    xviii. Year of manufacturer
    xix. Relevant standard with date of issue

6.8. Accessories

The following accessories shall be supplied as part of the switchboard.

i. Transport trolley
ii. Manual operating crank for the spring
iii. Low voltage plug connector

7. REVIEW AND APPROVAL OF SWITCHBOARD BEFORE MANUFACTURE SUBMISSION OF REVISED WORK PROGRAM

7.1. Submission of Documentation

- After the award of the contract, there shall be a kick-off meeting between the contractor and KenGen, where the said meeting shall be convened by KenGen. After the kick-off meeting, the contractor is expected to submit
  i. Detailed implementation program of the project.
  ii. Preliminary design documentation including but not limited to brochures, drawings, technical data sheet etc.
  iii. Curriculum Vitae (resume) of the project manager, site installation supervisor, commissioning engineer among others.

The documentation shall be submitted one (1) month after the kick-off meeting or such a duration as may be agreed during the kick-off meeting. KenGen requires three (3) weeks for review of all submitted drawings. The contractor should allow for this period for any documentation that is submitted for review. Additionally, the contractor should allow for back-and-forth on the submitted documents until such a time as the client may grant approval of the documentation by stamping "APPROVED" on the submitted documents.

7.2. Designs and Drawings Approval

- During the design stage, the contractor shall send drawings to the client for approval and comments. A copy of each drawing and item of data will be returned to the Contractor marked "Approved", or "Approved as noted", or "Not Approved".
- Drawings submitted by the contractor for approval will be checked / reviewed by the employer and comments, if any, on the same will be conveyed to the contractor. It is the responsibility of the contractor to incorporate correctly all the comments conveyed by the Employer on the Contractor's drawings. If the Contractor is unable to incorporate certain comments in his drawings, he/she shall clearly state in his forwarding letter such non-compliance along with valid reasons and justification.
- Comment of "not approved" would imply the drawing has to be re-done as per comments given; meaning the client is not in agreement with the content, idea and implications of the drawing on the overall design and operation of the system. Comment of "approved as noted" shall imply the client is in agreement with the idea or implications of the drawing but requires some changes to be implemented before approval.
- Drawings and data requiring revision shall be promptly dealt with and resubmitted as aforementioned. Thereafter, changes shall NOT be made in the Contractor's drawing without written permission of the Client Engineer. The above procedure shall be repeated for all authorized changes.
- It is to be understood, however, that approval of the drawings shall not relieve the Contractor of any responsibility in connection with the work.
- All drawing submitted for approval or sent to the Client for any other reason may be sent by courier or e-mail
- Any work performed or material ordered by the contractor prior to receipt of drawings stamped 'Approved' by the employer shall be at the risk of the contractor. After print of any drawing has been returned 'Approved', the contractor may release the parts covered by the drawing, for production / construction.
- All drawings and data supplied by the Contractor subsequent to the date of contract, which cover changes in the work, extra work, or which supplement existing drawings and data shall, upon approval by the Client Engineer, form part of the contract documents.

- If, at any time before the completion of the work, changes are made necessitating revision of approved drawings, the contractor shall make such revisions and proceed in the same routine as for the original approval.
- To expedite the delivery and return of the required drawings, scanned drawings shall be used and sent to the following KenGen E-mail addresses–

  anthonyk@kengen.co.ke
  c.c. pbogeto@kengen.co.ke
  nngumi@kengen.co.ke
  jmuoka@kengen.co.ke
  Or any other email supplied by the client.

- The work shall be in accordance with the approved drawings and data and shall not be commenced until such approval has been obtained. Subsequent changes contemplated by the Contractor shall be indicated on revised drawings and data resubmitted for approval. The Contractor shall make any changes in the design which are considered necessary to make the work conform to the provisions and intent of the specification without additional cost to KenGen.
- Approval of the Contractor's drawings and data shall in no way construe or imply relief of the Contractor from responsibility for any error or omission therein or from any obligation under the Contract.

7.3. Quality Control During Manufacture of Switchboard

- At any stage of the manufacture and assembly of the switchboard, KenGen may request for inspection of the quality control documents of the manufacturer/assembler of the switchboard. The inspection may include submission of test sheets, procedures, photos and other documents that may assure that the highest quality standards are being observed during the manufacture and assembly of the procedure. This clause overrides any clause by the manufacturer that may prohibit disclosure of internal quality processes and results thereof.
- Where such requests are made, the contractor is under obligation to produce such within three (3) weeks of such a request.

8. FACTORY TRAINING AND FACTORY ACCEPTANCE TESTING

There shall be factory training and testing of the switchboard at the factory premises of the manufacturer. The training and testing shall be as described here below. After successful manufacture and assembly of the switchboard, the bidder/contractor shall send an invite to KenGen for nomination of the staff to attend the factory training and witness factory testing. The factory tests shall be performed on a fully assembled switchboard – in a similar manner as it shall be assembled at site. After the factory tests, the bidder/contractor shall disassemble the switchboard and pack it for shipment to the client's site.

Three KenGen representative shall attend the factory training and testing of the switchboard. KenGen shall cater for the costs of VISA application, air travel to and from the airport nearest the factory. KenGen shall additionally meet accommodation costs for its representatives. The bidder/contractor shall be the cost of travel for the KenGen representatives from the airport to the hotel, and daily shuttle from the hotel to factory and back to hotel and the final trip to the airport.

8.1. Factory Training

a. Prior to the Factory Acceptance Test (FAT) on the circuit breaker & associated panels, the Contractor/bidder shall engage two representatives of the Client in a *comprehensive factory training* that will include but not be limited to:
   - Design features and functional operation of the circuit breakers
   - Development of arcs and arc quenching mediums – SF6, Vacuum, Air, GIS, etc
   - Circuit Breaker and Switching devices control schematics
   - Short circuit calculations for circuit breaker sizing, including simulations
   - Training on IEC 62271-37-013, IEC 62271-1,100, 200 etc
   - Differences between generator circuit breakers and distribution circuit breakers
   - Design of the main power and auxiliary control circuits – contacts, contact operating mechanism, arc-quenching medium;
   - Routine tests and maintenance practices. Including: overhaul criteria, preventive maintenance planning, routing tests for breakers
   - Condition monitoring of circuit breakers
   - Operation of circuit breakers including operation modes and procedures, interlocks and safety concepts, drive mechanisms and functions
   - One day guided factory tour of the assembly plant and testing for quality control.

   The training shall combine classroom training and practical lessons and is expected to last a minimum of three (3) days.

b. The detailed training programme shall be availed to the Client for approval at least three months before the scheduled dates for the FAT.

8.2. Factory Testing

The factory tests shall be guided by clause 7 of IEC 62271-37-13 in full. The factory shall demonstrate its ability to carry out the tests specified by submitting test procedures for review and approval by KenGen. The test procedure shall be submitted together with the detailed training programme as specified in clause 10.1 above.

a. **Before the FAT**:
   i. The tests to be carried out and the related procedures shall be sent to KenGen together with the invitation for the FT and FAT. The training and testing program shall be included in this documentation.
   ii. the *test sheets* on which the results of the tests shall be recorded shall be sent to the Client for inspection;
   iii. The *calibration certificates* of all the equipment that are to be used to perform the tests shall also be sent to the Client for examination.

b. **During the FAT** at the factory of manufacture, the following *routine tests* shall be carried out on both the circuit breakers fully assembled in the panels and ready for service:
   i. Dielectric tests (power-frequency voltage withstand test) on the main circuit – if the vacuum interrupter is inside a sealed enclosure the manufacturer shall indicate clearly a way of verifying that the integrity of the vacuum chamber has not been compromised;
   ii. Tests on auxiliary and control circuits –
      - inspection of circuits and verification of conformity to circuit diagrams and wiring diagrams – including resistance measurements of all resistors and coils;

- functional tests;
- verification of protection against electric shock – by visual inspection; and
- Dielectric tests (power frequency voltage withstand test) – of all control wiring associated with the current transformer secondaries and voltage device secondary's; the spring-charging motor shall be disconnected during the dielectric tests and afterwards tested in place with its specified dielectric withstand voltage.

iii. Measurement of the dc resistance of the main circuit;
iv. Tightness test (vacuum pressure level test); and
v. Design and visual checks.
vi. Mechanical Operating tests

c. **After completion of the FAT**, the bidder/contractor and KenGen shall hold a final meeting on the tests carried out and results thereof. These minutes plus the test results shall form part of official documentation for the payment via Letter of Credit.

9. PACKING, TRANSPORT AND STORAGE PRIOR TO INSTALLATION

a. The manufacturer's instructions shall govern packing, transport and storage prior to installation of the GCB and ACB. An *instruction manual* containing these instructions shall be provided to the Client by the manufacturer after successful completion of the FAT.
b. The GCB and ACB shall be *disassembled and shipped as separate units*.
c. Each package shall have *appropriate labeling on its exterior* indicating the particular component of the GCB and ACB, its mass in kilograms, how to position it, and how to lift it.
d. The names on the labels of different packages that are the different parts of the GCB and ACB shall *correspond* to the names in the installation manual.
e. Each package shall have *adequate lifting facilities* as part of its structure.
f. *Service conditions* shall be ensured during transport and storage, especially temperature and humidity.
g. Special consideration shall be taken to protect the insulation from absorbing *moisture* during the transport and storage.

10. SITE INSTALLATION WORKS

a. Under this contract, the contractor shall provide supervision of site works during the installation, testing and commissioning of the switchboard. This supervision includes the services of a commissioning engineer. The supervisor shall have previous experience of installation of similar switchboard. KenGen will provide staff who will be seconded to the contractor for the period of the site works. The seconded staff will be under the supervisor for allocation of duties and other tasks related to the site works under this project. However, KenGen staff shall not be involved in civil works that may arise out of these works, unless with EXPRESS APPROVAL of the project engineer or Chief Engineer, Masinga Power Station.
b. KenGen shall also provide lifting equipment, mobile crane, standard tools as may be required. Special tools shall be provided by the contractor at no additional cost to KenGen.

c. All the costs of the supervisor incurred at site will be the responsibility of the contractor. This includes air travel, inland transport, meals, accommodation, refreshment, entertainment, site office and related costs. These costs should be factored in the price schedule. KenGen may provide electricity and water at the site works upon request by the contractor and to the extent that no direct cost is incurred by KenGen – to extent that these are easily available at the site.
d. Prior to installation, the client shall, at the manufacturer's request, provide the manufacturer with *relevant information about the site of installation*, including any limitations in accessibility, local working conditions, availability and capability of lifting and handling equipment, and interface requirements for connection of the GCB to the generator and main transformer and connection of the ACB to the GCB and auxiliary transformer.
e. The manufacturer shall provide the Client with an *instruction manual* containing instructions for unpacking and installation.
f. The information contained in this manual shall include but not be limited to:
    a. the *space* necessary for installation and assembly;
    b. the *masses* of individual components and the total mass of the GCB and ACB once fully and correctly assembled;
    c. *site characteristics* pertaining to cleanliness and temperature required prior to installation;
    d. number of *personnel* required for timely installation;
    e. *order of activities* to be done in the installation and a timeline; and
    f. any *special electricity and lighting needs* during the installation.
g. Any *special site preparations required prior to installatio*n of the GCB and ACB shall be included in this manual, and communicated to the Client in good time prior to installation, to allow adequate preparation of the site.
h. The correct method of *lifting each package*, as indicated clearly on the exterior, shall be followed.
i. Any *special precautions* that should be taken when handling particular packages shall be indicated in the instruction manual.
j. The correct method of *assembly and mounting* of the different components of the GCB and ACB, illustrated adequately by drawings, shall be indicated in the instruction manual, and followed.
k. The correct method of connection of the different components of the GCB and ACB, illustrated adequately by drawings, shall be indicated in the instruction manual and followed, including:
    i. how to properly connect the conductors to the GCB's and ACB's terminals so as to prevent overheating and undue stress on them while observing adequate clearances;
    ii. how to connect the auxiliary circuits; and
    iii. how to earth the GCB and ACB.

11.SITE TESTING AND COMMISSIONING

a. The manufacturer shall provide an *instruction manual* for conducting a final inspection after installation prior to commissioning, and the commissioning procedure that shall be carried out to establish correct operation of the GCB and ACB.

b. The manual shall contain a list of *commissioning tests* that shall be carried out on the fully assembled GCB and ACB, the test equipment required, and the procedure of each test.
c. The commissioning tests shall verify that no component of the GCB and ACB was *damaged* from the time of packing up to assembly, the components are *compatible* with each other, the GCB and ACB have been *assembled correctly*, and the assembled GCB and ACB *performs correctly*.
d. If any test requires some *modification* or *adjustment* to the assembled GCB and ACB, this shall be clearly indicated in the procedure of the test.
e. Since the GCB and ACB were disassembled and shipped as separate units, after assembly *all the routine tests done during the FAT* (see 'Factory Training and Factory Acceptance Testing' section above) shall be part of the commissioning tests done, as stipulated by IEC 62271-37-12 clause 7. Before performing the routine tests the reading on the operations counter shall be recorded.
f. After the routine tests, the following *commissioning tests* shall be done and their results recorded in a commissioning tests report:
    i. General checks –
        a) conformity of GCB and ACB to the Client's specifications, manufacturer's drawings and instructions;
        b) tightness of the GCB's and ACB's fastenings, fluids and control devices;
        c) external insulation is undamaged and clean;
        d) paint and corrosion protection is sound;
        e) operating devices are free from contamination, especially operating releases;
        f) adequacy and integrity of the earth connection, up to and including the interface with the substation earthing system; and
        g) recording of the reading of the operations counter before commissioning tests commence.
    ii. Electrical circuits checks –
        a) Conformity to wiring diagrams;
        b) Correct operation of signaling (position, alarms, lockout, etc.); and
        c) Correct operation of lighting.
    iii. Vacuum interrupter enclosure insulation checks –
        a) Filling pressure and density;
        b) Quality compared to manufacturer's accepted level.
    iv. Lubricating fluid checks –
        a) Level;
        b) Moisture content.
    v. Mechanical tests and measurements –
        a) Vacuum pressure level;
        b) Verification of the standard operating sequence;
        c) Closing and opening times, and time spreads, and operation of control and auxiliary contacts;
        d) Recharging time of the operating mechanism;
        e) Record of mechanical travel characteristics; and
        f) Check of anti-pumping device.
g. The manufacturer shall also recommend relevant tests and measurements to be taken and recorded during the *future maintenance* of the GCB and ACB during their active life.
h. The manual shall also contain instructions for conducting a *final inspection* after performing the commissioning tests prior to the GCB and ACB being put into service.

i. The manual shall also contain a procedure with instructions for *putting the GCB and ACB into service.*

12.OPERATION AND MAINTENANCE

a. The manufacturer shall provide an *instruction manual* containing instructions for operation and routine maintenance of the GCB and ACB.

b. The *operation instructions* shall include but not be limited to:
   i. A general description of the equipment;
   ii. A technical description of the unique characteristics of the equipment and the principles by which it operates;
   iii. A description of the *safety features* (like padlocking facilities) and how the interlocking facilities work;
   iv. A description of the available *modes of operation,* how to put the equipment into isolation mode, testing mode, maintenance mode and how to earth it; and
   v. A description of any *special measures* to take to protect the equipment from harmful effects such as corrosion.

c. The instructions for *routine maintenance* shall include but not be limited to:
   i. Manufacturer's recommendation for the extent and frequency of routine maintenance – based on the number of switching operations, total number of operations, time in service, environmental conditions and any measurements and diagnostic tests;
   ii. Comprehensive drawings and description of the maintenance work – including procedures, references to drawings, reference to part numbers, any special tools to be used, and precautions to take;
   iii. Limits and tolerances of important parameters which when exceeded require corrective action – including pressures, resistances and capacitances in the main circuit, operating times, insulation gas characteristics of the gas, permissible erosion of parts subject to wear, torques and important dimensions;
   iv. Specifications of appropriate and inappropriate auxiliary maintenance materials – such as lubrication oil, cleaning agents and degreasing agents;
   v. List of special tools, lifting and access equipment to be used;
   vi. Tests to be done after the maintenance work;
   vii. List of recommended spare parts to stock (description, reference numbers and quantities) and advice for their storage;
   viii. Estimate of active scheduled maintenance time;
   ix. Environmentally-friendly disposal of the equipment after its life;
   x. Corrective actions required when systematic defects and failures are detected in the equipment during its service;

13.SPARES

The manufacturer shall provide the following spares:

a. 1 Vacuum interrupter unit
b. 2 Closing Coil
c. 4 Tripping Coils
d. 1 Spring charging motor
e. Complete set of auxiliary contacts
f. 1 Control switch

g. 1 Selector switch (local/remote)
h. 2 auxiliary circuit relays of each type
i. 2 auxiliary circuit MCBs of each type
j. 2 digital multimeters of type supplied
k. 1 complete set of connection plug including female and male parts of the plug, connecting wires, etc

TECHNICAL SCHEDULE

The following technical schedules must be completed in their entirety by the Tenderer at the time of tendering.

Note 1:
The bidder is expected to indicate, as the case may apply,

- Equipment rating, features, standards used, etc.
- Whether the offer complies with the specified clause of the tender document (Compliant or Not Compliant)

Note 2:
The contractor shall provide layouts drawings, detailed drawings, detailed description of offer, brochures, datasheets as reference documents that shall clearly show the equipment offered, associated features indicated in the technical schedule.

a. GENERATOR CIRCUIT BREAKER

GENERATOR CIRCUIT BREAKER				
No.	**Description**		**Details of product offered**	**Reference in bid document (page)**
1.	***Ratings***			
a.	*Rated maximum voltage U_r (kV)*			
b.	*Rated insulation level*	Power frequency withstand voltage, U_d (kV_{rms})		
		Lightning impulse withstand voltage, U_p (kV_{peak})		
c.	*Rated power frequency, f_r (Hz)*			
d.	*Rated normal current, I_r (kA)*			
e.	*Temperature rise (°C)*	Parts handled by operator in the normal course of work		
		External surfaces accessible to the operator in the normal course of work		

		External surfaces inaccessible to the operator in the normal course of work		
f.	*Rated short-time withstand current, I_k (kA_{rms})*			
g.	*Rated peak withstand current, I_p (kA_{peak})*			
h.	*Rated duration of short-circuit, t_k (s)*			
i.	*Rated supply voltage of closing and opening devices and of auxiliary and control circuits, U_a (V)*			
j.	Permissible supply voltage range for closing and auxiliary functions			
k.	Permissible supply voltage range for tripping functions			
l.	*Rated short-circuit current*	Rated system-source short-circuit breaking current, I_{sc}		
		Rated generator-source short-circuit breaking current, I_{scg}		
		Rated single-phase-to-earth fault breaking current (A)		
m.	*Rated peak short-circuit making current, I_{MC}*			
n.	*Rated load making and breaking current*			
o.	*Rated out-of-phase making and breaking current*			
p.	*Rated transient recovery voltage (TRV) related to the breaking currents*	TRV parameters for system-source faults		
		TRV parameters for generator-source faults		
		TRV parameters for load current switching		
		TRV parameters for out-of-phase current switching		
q.	*Standard operating sequence*			
r.	*Excitation switching current*			
s.	*Rated time quantities*	Opening time (no-load) (ms)		
		Break time (ms)		

		Closing time (no-load) (ms)		
		Close-open time (no-load) (ms)		
t.	*Mechanical operation endurance capability class*			
u.	Arc-quenching medium			
v.	Basic design and application philosophy			
w.	Number of Tripping Coils			
x.	Number of Closing Coils			
y.	Cooling			
z.	Voltage range factor (K)			
2.	***Construction***			
a.	Pole assemblies:			
	Number of vacuum interrupters			
	Number of interrupter supports			
	Number of braces			
	Distance between pole centres (mm)			
b.	Operating mechanism box:			
	Number of springs			
	Ways available of charging the springs			
	Spring-charging motor voltage and current rating			
	Short-circuit protection for spring-charging motor			
	Operating modes			
c.	Ingress Protection rating			
d.	Cubicle:			
	Number of sections in the cubicle			
	Front door lockability			
	Front door inspection window			
	Operating buttons mounted on front door			
	Cable entry into cubicle			
	Single-phase power outlet in cubicle			
	Number of analogue indication meters mounted			
	Method of ventilation and cooling			
	Cubicle material and colour			
e.	Instrument transformers:			
	Number of Current Transformers			
	Number of Voltage Transformers			
	Current Transformer specifications			
	Voltage Transformer specifications			
3.	***Controls***			
a.	Trip-free mechanism			
b.	Lock-out mechanism			
c.	Anti-pumping mechanism			

d.	Interlocking mechanism		
e.	Number of auxiliary contacts		
f.	Number of voltage-free contacts		
4.	***Nameplate***		
a.	Nameplate material		
b.	Nameplate location		

b. STATION TRANSFORMER CIRCUIT BREAKER

STATION TRANSFORMER CIRCUIT BREAKER				
No.	**Description**		**Details of product offered**	**Reference in bid document (page)**
1.	***Ratings***			
a.	*Rated maximum voltage U_r (kV)*			
b.	*Rated insulation level*	Power frequency withstand voltage, U_d (kV_{rms})		
		Lightning impulse withstand voltage, U_p (kV_{peak})		
c.	*Rated power frequency, f_r (Hz)*			
d.	*Rated normal current, I_r (kA)*			
e.	*Temperature rise (°C)*	Parts handled by operator in the normal course of work		
		External surfaces accessible to the operator in the normal course of work		
		External surfaces inaccessible to the operator in the normal course of work		
f.	*Rated short-time withstand current, I_k (kA_{rms})*			
g.	*Rated peak withstand current, I_p (kA_{peak})*			
h.	*Rated duration of short-circuit, t_k (s)*			
i.	*Rated supply voltage of closing and opening devices and of auxiliary and control circuits, U_a (V)*			
j.	Permissible supply voltage range for closing and auxiliary functions			

k.	Permissible supply voltage range for tripping functions			
l.	*Rated short-circuit current*	Rated system-source short-circuit breaking current, I_{sc}		
		Rated generator-source short-circuit breaking current, I_{scg}		
		Rated single-phase-to-earth fault breaking current (A)		
m.	*Rated peak short-circuit making current, I_{MC}*			
n.	*Rated load making and breaking current*			
o.	*Rated out-of-phase making and breaking current*			
p.	*Rated transient recovery voltage (TRV) related to the breaking currents*	TRV parameters for system-source faults		
		TRV parameters for generator-source faults		
		TRV parameters for load current switching		
		TRV parameters for out-of-phase current switching		
q.	*Standard operating sequence*			
r.	*Excitation switching current*			
s.	*Rated time quantities*	Opening time (no-load) (ms)		
		Break time (ms)		
		Closing time (no-load) (ms)		
		Close-open time (no-load) (ms)		
t.	*Mechanical operation endurance capability class*			
u.	Arc-quenching medium			
v.	Basic design and application philosophy			
w.	Number of Tripping Coils			
x.	Number of Closing Coils			
y.	Cooling			
z.	Voltage range factor (K)			

2.	***Construction***		
a.	Pole assemblies:		
	Number of vacuum interrupters		
	Number of interrupter supports		
	Number of braces		
	Distance between pole centres (mm)		
b.	Operating mechanism box:		
	Number of springs		
	Ways available of charging the springs		
	Spring-charging motor voltage and current rating		
	Short-circuit protection for spring-charging motor		
	Operating modes		
c.	Ingress Protection rating		
d.	Cubicle:		
	Number of sections in the cubicle		
	Front door lockability		
	Front door inspection window		
	Operating buttons mounted on front door		
	Cable entry into cubicle		
	Single-phase power outlet in cubicle		
	Number of analogue indication meters mounted		
	Method of ventilation and cooling		
	Cubicle material and colour		
e.	Instrument transformers:		
	Number of Current Transformers		
	Number of Voltage Transformers		
	Current Transformer specifications		
	Voltage Transformer specifications		
3.	***Controls***		
a.	Trip-free mechanism		
b.	Lock-out mechanism		
c.	Anti-pumping mechanism		
d.	Interlocking mechanism		
e.	Number of auxiliary contacts		
f.	Number of voltage-free contacts		
4.	***Nameplate***		
a.	Nameplate material		
b.	Nameplate location		

c. Common Busbar

COMMON BUSBAR			
No.	**Description**	**Details of product offered**	**Reference in bid document (page)**
1.	Material		
2.	Number of conductors		
3.	Conductor dimensions – length, width, thickness		
4.	Insulation type and rating		
5.	Voltage rating		
6.	Voltage drop		
7.	Short-time withstand rating (current and time)		
8.	Instantaneous peak current withstand rating		
9.	Frequency rating		

PRICE SCHEDULE

No.	Description	Unit	Quantity	Amount
1.	Design and manufacture, supply and delivery of 1 Generator Circuit Breakers and 1 Auxiliary Circuit Breakers and common busbar as per technical specifications (DDP Masinga Stores)	pc	one	
2.	Supply and delivery of spares to Masinga Stores (DDP) (attach itemized list)	Lot	one	
3.	Factory Training	Activity	one	
4.	Factory Acceptance Tests	Activity	one	
5.	Supervision of installation (site) works and Commissioning tests (site acceptance tests after installation)	Activity	one	
6.	Documentation (installation, commissioning, routine operation and maintenance documents)	Activity	one	
7.	Commissioning tests (site acceptance tests after installation)	Activity	one	
8.	Any other Cost (Indicate and itemize)	Activity	one	
	Total Cost, DDP Masinga Stores			

Note:
Prices quoted include all applicable taxes.
This price schedule must be stamped and signed by the bidder. The date of signing must also be indicated.

Tenderer's Name: _____

Authorized Signature _____

Date: _____

Company Rubber Stamp: _____

SECTION VII
STANDARD FORMS

8.1 FORM OF TENDER

Date _____Tender No. _____

To: _____
[name and address of procuring entity]

Gentlemen and/or Ladies:

1. Having examined the tender documents including Addenda Nos. ……. *[insert numbers]*.the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply deliver, install and commission (…… (*insert equipment description*) in conformity with the said tender documents for the sum of ……. (*total tender amount in words and figures*) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Tender.

2. We undertake, if our Tender is accepted, to deliver install and commission the equipment in accordance with the delivery schedule specified in the Schedule of Requirements.

3. If our Tender is accepted, we will obtain the guarantee of a bank in a sum of equivalent to ____ _____ percent of the Contract Price for the due performance of the Contract , in the form prescribed by ……. ……..(*Procuring entity).*

4. We agree to abide by this Tender for a period of 90 days from the date fixed for tender opening of the Instructions to tenderers, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

5. This Tender, together with your written acceptance thereof and your notification of award, shall constitute a Contract, between us, subject to signing of the Contract by the parties.

6. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 20 _____

_____ _____
[signature] [in the capacity of]

Duly authorized to sign tender for an on behalf of _____

Note: In accordance with **Clause 82** of the **Public Procurement and Asset Disposal Act 2017**
"The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.

8.2 ***MANDATORY CONFIDENTIAL BUSINESS QUESTIONNAIRE***

(Must be filled by all applicants or Tenderers' who choose to participate in this tender)

Name of Applicant(s).....

You are requested to give the particulars in Part 1 and either Part 2 (a), 2 (b) or 2 (c), whichever applies to your type of business. Part 2 (d) to part 2 (i / j) must be filled. You are advised that giving wrong or false information on this Form will lead to automatic disqualification of your tender or termination of your contract or debarment of your firm at your cost.

Part 1 – General

Business Name:……Certificate of Incorporation / Registration No.
……..…Location of business premises:
Country ……..…Physical address …….…….
Town …….……..Building……
Floor……Plot No. ……..…….
Street / Road ……..……Postal Address ……..……
Postal / Country Code……Telephone No's…...……
Fax No's. …….……E-mail address
Website
…….
Contact Person (*Full Names*) …… Direct / Mobile No's.……..…
Title …… Power of Attorney (**Yes / No**)
If **yes,** attach written document.
Nature of Business (*Indicate whether manufacturer, distributor, etc)*
……..…….……..

(Applicable to Local suppliers only)

Local Authority Trading License No. …… Expiry Date ……..
KRA PIN
No.……..……
Value of the largest single assignment you have undertaken to date (***US D/KShs)***
……..……
Was this successfully undertaken? **Yes / No**. ……(If **Yes**, attach reference)
Name (s) of your banker (s)
……..……
Branches …… Tel. No's. ……..…….

Part 2 (a) – Sole Proprietor (if applicable)

Full names
……..……..……
Nationality…….. Country of Origin……...……
……..……..……
Company Profile ……. (*Attach brochures or annual reports in case of public company)*

Part 2 (b) – Partnerships (if applicable)
Give details of partners as follows:

Full Names Nationality Citizenship Details Shares
1. ……
2. ……

Company Profile …….

Part 2 (c) – Registered Company (if applicable - as per the CR12 form)
Private or public …….
Company Profile ……. (*Attach brochures or annual reports in case of public companies)*
State the nominal and issued capital of the Company
Nominal KShs ……..…….
Issued KShs ……..…….
List of top ten (10) shareholders and distribution of shareholding in the company.
Give details of all directors as follows:-

Full Names Nationality Citizenship Details Shares
1……. …… …… …….…….
2…… …… …… ……..…..…..

Part 2 (d) – Debarment
I/We declare that I/We have not been debarred from any procurement process and shall not engage in any fraudulent, corrupt, coercive and obstructive acts with regard to this or any other tender by the KENGEN and any other public or private institutions.
Full Names
……
Signature
……
Dated this…….……day of
……2019.
In the capacity of
……

Duly authorized to sign Tender for and on behalf of
……

Part 2 (e) – Bankruptcy / Insolvency / receivership.
I/We declare that I/We have not been declared bankrupt or insolvent by the competent Authorities in Kenya and neither are we under receivership:
Full Names
……
Signature
……
Dated this……day of ……2019.
In the capacity of
……
Duly authorized to sign Tender for and on behalf of
……

Part 2 (f) – Criminal Offence
I/We, (Name (s) of Director (s)):-
a) ……..……..……

b) ……..…….

Have not been convicted of any criminal offence relating to professional conduct or the making of false statements or misrepresentations as to its qualifications to enter into a procurement contract within a period of three (3) years preceding the commencement of procurement proceedings.
Signed
……
For and on behalf of M/s
……..……
In the capacity of
……..……
Dated this……day of ……2019.
Suppliers' / Company's Official Rubber Stamp
……

Part 2 (g) – Conflict of Interest
I/We, the undersigned state that I / We have no conflict of interest in relation to this procurement:
a) ……
b) ……
For and on behalf of M/s
……..
In the capacity of
……

Dated this……day of …….2019

Suppliers' / Company's Official Rubber Stamp
……

Part 2 (h) – Interest in the Firm:
Is there any person/persons in KENGEN or any other public institution who has interest in the Firm? Yes/No …….. (*Delete as necessary)*
Institution…….
…… ……
(Title) (Signature) (Date)

Part 2(i) – Experience: NOTE: THIS SECTION IS MANDATORY ONLY IF IT FORMS PART OF TECHNICAL EVALUATION. IT'S ALSO NOT NECESSARY FOR ALREADY PRE-QUALIFIED OR DIRECT PROCUREMENT FIRMS. ITS ALSO NOT APPLICABLE FOR AGPO FIRMS TENDERS.

Please list here below similar projects accomplished or companies / clients you have supplied with similar items or materials in the years prescribed.

	Company Name	Country	Contract/Order No.	Value	Contact person (Full Names	E-mail address	Cell phone No.
1							
2							

Part 2 (i or j) – Bank account details:

AGPO firms must provide evidence from their bank that the account to which KenGen shall make payment has a youth or a woman or a PWD listed in the CR12 form/partnership deed/sole proprietor certificate as a MANDATORY signatory of that account,- Sec.157 (11) of PPADA:

Account No:……..…..Name of the person(s) in the CR12 form OR in the partnership deed OR in the sole proprietor certificate……...../.....……..……
ID No(s):……/……..……..…...Signature and stamp of the authorized Banker Representative……..……Date…….

Part 2(j or k) – Declaration

I / We, the undersigned state and declare that the above information is correct and that I / We give KENGEN authority to seek any other references concerning my /

our company from whatever sources deemed relevant, e.g. Office of the Registrar of Companies, Bankers, etc.
Full names
……
Signature……
For and on behalf of M/s
……
In the capacity of
……
Dated this ……day of
……2019.
Suppliers' / Company's Official Rubber Stamp
……

8.3 **TENDER SECURITY FORM**

(To be on the Banks Letterhead)

WHEREAS ……. [*name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated ……. [*date of submission of tender]* for …… ……*[name and/or description of the equipment]* (hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that **WE** …… of ……. having our registered office at ……. (hereinafter called "the Bank"), are bound unto the **Kenya Electricity Generating Company Limited** (hereinafter called "the Procuring entity") in the sum of …….. for which payment well and truly to be made to you, the Bank binds itself, its successors, and assigns by these presents.

Sealed with the Common Seal of the said Bank this _____day of _____20

THE CONDITIONS of this obligation are:-

1. If the tenderer withdraws its Tender during the period of tender validity specified by the tenderer on the Tender Form; or
2. If the tenderer, having been notified of the acceptance of its Tender by the Procuring entity during the period of tender validity:
   (a) fails or refuses to execute the Contract Form, if required; or
   (b) fails or refuses to furnish the performance security in accordance with the Instructions to tenderers;

We undertake to pay the Procuring entity up to the above amount upon receipt of its first written demand, without the Procuring entity having to substantiate its demand, provided that in its demand the Procuring entity will note that the amount claimed by

it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This tender guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

*[Signature of the bank]*_____

(Amend accordingly if provided by Insurance Company)

8.4 CONTRACT FORM

THIS AGREEMENT made the _____ day of _____ 20 ____ between …… [*name of* **the Employer***)* of …….. [*country of* **the Employer***]* (hereinafter called "**the Employer**) of the one part and …….. [*name of* **the Supplier***]* of …….. [*city and country of* **the Supplier***]* (hereinafter called "**the Supplier**") of the other part;

WHEREAS **the Employer** invited tenders for …….] and has accepted a tender by the tenderer for the supply of ……. in the sum of …… [*contract price in words and figures]* (hereinafter called "the Contract Price).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to:

2. The following documents shall be deemed to form and be read and construed as part of this Agreement viz:

(a) the Tender Form and the Price Schedule submitted by the tenderer
(b) the Schedule of Requirements
(c) the Technical Specifications
(d) the General Conditions of Contract
(e) the Special Conditions of contract; and
(f) the Procuring entity's Notification of Award and Tenderer's Acceptance
(g) Applicable addenda and clarifications

3. In consideration of the payments to be made by the Procuring entity to the tenderer as hereinafter mentioned, the tenderer hereby covenants with the Procuring entity to provide the goods and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring entity hereby covenants to pay the tenderer in consideration of the provisions of the goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed by _____ the _____ (for the Procuring entity

Signed by _____ the _____ (for the tenderer in the presence of _____ _____

(Amend accordingly if provided by Insurance Company)

8.5 PERFORMANCE SECURITY FORM

(To be on the Banks Letterhead)

To …….
[*name of Procuring entity]*

WHEREAS …… [*name of tenderer*] (hereinafter called "the tenderer") has undertaken , in pursuance of Contract No. _____ [*reference number of the contract]* for dated _____ 20 _____ to supply …… [*description of goods]* (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the tenderer shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Tenderer's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the tenderer a guarantee:

NOW THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the tenderer, up to a total of ……. [*amount of the guarantee in words and figure]* and we undertake to pay you, upon your first written demand declaring the tenderer to be in default under the Contract and without cavil or argument, any sum or sums within the limits of …….. [*amount of guarantee]* as aforesaid, without you needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the _____ day of _____ 20 __

Signed and seal of the Guarantors

_____

[name of bank or financial institution]

_____

[address]

_____

[date]

8.6 MANUFACTURER'S AUTHORIZATION FORM

To [*name of the Procuring entity]* ……..

WHEREAS ……[*name of the manufacturer]* who are established and reputable manufacturers of …….. [*name and/or description of the goods]* having factories at …… [*address of factory]* do hereby authorize …… [*name and address of Agent]* to submit a tender, and subsequently negotiate and sign the Contract with you against tender No. ……. [*reference of the Tender]* for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation for Tenders.

_____

[*signature for and on behalf of manufacturer]*

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person authorized.

8.7 SCHEDULE OF SUPPLY OF CIRCUIT BREAKERS SATISFACTORILY CARRIED OUT BY THE TENDERER WITHIN THE LAST FIVE YEARS

NO.	DESCRIPTION OF CIRCUIT BREAKERS	VALUE OF WORKS (KSHS)	YEAR COMPLETED

I hereby certify that the above have been successfully carried out and completed by us.

_____

[Signature and stamp of tenderer]

_____

[Address]

_____

[Date]

8.8 DETAILS OF CONTRACTS OF SIMILAR NATURE AND COMPLEXITY [Form 3A]

Name of Tenderer or partner of a joint venture/consortium

Use a separate sheet for each contract.

1.	Number of contract
	Name of contract
	Country
2.	Name of employer
3.	Employer address
4.	Nature of works and special features relevant to the contract for which the tenderer wishes to bid
5.	Contract role (check one) • Sole contractor • Subcontractor • Partner in a joint venture/consortium

6.	Value of the total contract (in specified currencies at completion, or at date of award for current contracts) Currency
7.	Equivalent value US$
8.	Date of award
9.	Date of completion
10	Contract duration (years and months) _____years _____months
11.	Specified requirements[1]

[1] Insert any specific criteria required for the execution of the contract.

This information is declared to be correct by (Tenderer's authorized representative)

Name…… Signature……

Position in the Firm…… Date……

8.9 KEY PERSONNEL CAPABILITIES

Name of tenderer……..

For specific positions essential to contract implementation, applicants should provide the names of at least two candidates qualified to meet the specified requirements stated for each position set out in clause 23. Personnel Capabilities in the Instructions to Tender. The data on their experience should be supplied in separate sheets using one Form (5A) for each candidate.

	Title of position: c ontract Manager
	Name of prime candidate:
	Name of alternate candidate:
2.	Title of position: Installation Supervisor Mechanical equipment
	Name of prime candidate:
	Name of alternate candidate:
3.	Title of position: Installation Supervisor Electrical equipment
	Name of prime candidate:
	Name of alternate candidate:
4.	Title of position: Commissioning Engineer
	Name of prime candidate:
	Name of alternate candidate:

8.10 CVS OF KEY PERSONNEL [Form 5A]

Name of Tenderer:

Position		Candidate • Prime • Alternate
Candidate information	1. Name of candidate	2. Date of birth
	3. Professional qualifications	
Present employment	4. Name of employer	
	Address of employer	
	Telephone	Contract (manager/personnel officer)
	Fax	Telex
	Job title of candidate	Years with present employer

Summarize professional experience over the last 6 years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the Project.

From	To	Company/Project/Position/ Relevant technical and management experience

I certify that the above information is correct.

…… …… ……..

(Candidate) (Signature) (Date)

…… …… ……..

(Authorized Officer) (Signature) (Date)