RURAL ELECTRIFICATION & RENEWABLE ENERGY CORPORATION

TENDER DOCUMENTS FOR WORKS – BUILDING AND ASSOCIATED WORKS

KAWI HOUSE, SOUTH C,
P.O. Box 34585, 00100
Nairobi, Kenya
e-mail: info@rea.co.ke; tenders@rea.co.ke

TEL NO.254-20-2710955/2713921

INVITATION TO TENDER (ITT) No; RFX No. 1000000791

TENDER NAME; DADAJABULA SOLAR PV MINI GRID, IN WAJIR SOUTH CONSTITUENCY, WAJIR COUNTY

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INVITATION TO TENDER

PROCURING ENTITY: Rural Electrification and Renewable Energy Corporation.

CONTRACT NAME AND DESCRIPTION:

Contract Number	Contract Name and Description	New Closing/Opening Date and Time
RFX No. 1000000791	Dadajabula Solar PV Mini Grid, In Wajir South Constituency, Wajir County.	21/04/2022 @ 10.00am

1. The Rural Electrification and Renewable Energy Corporation invites sealed tenders for the Dadajabula Solar PV Mini Grid, In Wajir South Constituency, Wajir County.
2. Tendering will be conducted under open competitive method National using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours 8.00am-12.45pm to 1.45pm-4.00pm Monday to Friday at the address given below.
4. A complete set of tender documents may be viewed and downloaded by interested tenderers free of charge electronically from the Website www.rerec.co.ke under tender documents or through the e-procurement portal using https://suppliers.rea.co.ke:44300/irj/portal
5. Tenders shall be quoted be in Kenya Shillings and shall include all taxes. Tenders shall remain valid for 140 days from the date of opening of tenders.
6. Tenderers who are not yet registered with REREC must register their companies in order to participate in the tender using link below that can be found from the website www.rerec.co.ke Procurement-Supplier registration:

https://suppliers.rea.co.ke:44200/supportal(bD1lbiZjPTUwMCZkPW1pbg==)/bspwdapplication.do#VIEW_ANCHOR-ROS_TOP

7. All Tenders must be accompanied by a tender Security of Ksh 2,500,000.00. Original bid securities shall be deposited to the tender box before closing date and time.
8. The Tenderer shall chronologically serialize all pages of the tender documents submitted.
9. Completed tenders must be delivered to the address below on or before 21/04/2022 at 10.00am. Only Electronic Tenders will be permitted.
10. Tenders will be opened immediately after the deadline date and time specified above or any dead line date and times specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below and the results relayed electronically.
11. Late tenders will be rejected.
12. The addresses referred to above are:
13. Address for obtaining further information on tender document: For hand Courier bid security Delivery to Tender Box located in Ground floor, Block C, Kawi House Complex, Off Popo Road, South C, Nairobi. Contact Manager, Supply Chain Management, telephone number 0709193000 and e-mail address tenders@rerec.co.ke
14. Address for Submission of Tenders: Online Through http://suppliers.rea.co.ke:44300/irj/portal
15. Address for Opening of Tenders: Ground floor, Block C, Kawi House Complex, Off Popo Road, South C, Nairobi.

Designation: **Chief Executive Officer** Signature:…….

Date: 8th March, 2022

PART1: TENDERING PROCEDURES

SECTION I - INSTRUCTIONS TO TENDERERS

A GENERAL PROVISIONS

1.0 Scope of tender

1.1 The Procuring Entity as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are specified in the TDS.

1.2 Throughout this tendering document:

a) The term "inwriting" means communicated in written form (e.g. by mail, e-mail, fax, including if specified in the TDS, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt;

b) if the context so requires, "singular" means "plural" and vice versa;

c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Procuring Entity. It excludes official public holidays.

2.0 Fraud and corruption

2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.

2.3 Tenderers shall permit and shall cause their agents (whether declared or not), subcontractors, sub-consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, pre-qualification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Procuring Entity.

2.4 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all in formation that would in that respect give such firm any unfair competitive advantage over competing firms.

3.0 Eligible tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.8, or an individual or any combination of such entities in the form of a joint venture (JV) under an existing agree mentor with the intent to enter in to such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the **TDS.**

3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which

they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:

a) Directly or indirectly controls, is controlled by or is under common control with an other tenderer;

b) Receives or has received any director indirect subsidy from another tenderer;

c) Has the same legal representative as an other tenderer;

d) Has a relationship with an other tenderer, directly or through common third parties, that puts it in a position to influence the tender of an other tenderer, or influence the decisions of the Procuring Entity regarding this tendering process;

e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods or works that are the subject of the tender;

f) Any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as a consultant for Contract implementation;

g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document;

h) Has a close business or personal relationship with senior management or professional staff of the Procuring Entity who has the ability to influence the bidding process and:

   i) Are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or

   ii) May be involved in the implementation or supervision of such Contract unless the conflicts temming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

3.4 A tenderer shall not be involved in corrupt, coercive, obstructive or fraudulent practice. A tenderer that is proven to have been involved in any of these practices shall be automatically disqualified

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. Members of a joint venture may not also make an individual tender, be a sub-contractor in a separate tender or be part of another joint venture for the purposes of the same Tender. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. ATenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed sub-contractors or sub-consultants for any part of the Contract including related Services.

3.7 A Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.

3.8 A Tenderer that is a state-owned enterprise or a public institution in Kenya may be eligible to tender and be awarded Contract(s) only if it is determined by the Procuring Entity to meet the following conditions, i.e. if it is:

i) A legal public entity of Government and/or public administration,

ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and;

(iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprisetoenableitcompetewithfirmsintheprivatesectoronanequalbasis.

3.9 Firms and individuals shall be ineligible if their countries of origin are:

(a) As a matter of law or official regulations, Kenya prohibits commercial relations with that country;

(b) byanactofcompliancewith a decision of the United Nations Security Council taken under Chapter VII of theCharterof the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local sub-contracts and labor) from citizen suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided for this purpose in *"SECTIONI II - EVALUATION AND QUALIFICATION CRITERIA, Item 9".*

3.11 Pursuant to the eligibility requirements of ITT 3.10, a tender is considered a foreign tenderer, If it is registered in Kenya and has less than 51 percent ownership by nationals of Kenya and if it does not subcontract to foreign firms or individuals more than 10 percent of the contract price, excluding provisional sums. JVs are considered as foreign tenderers if the individual member firms registered in Kenya have less 51 percent ownership by nationals of Kenya. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

3.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.

3.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke.

4.14 A kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing valid tax compliance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4.0 Eligible goods, equipment, and services

4.1 Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not ineligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.

4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

5.0 Tenderer's responsibilities

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.

5.2 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine and

inspect the Site of the Works and its surroundings and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall beat the tenderer's own expense.

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity again stall liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the examination and inspection.

5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

B. CONTENTS OF TENDER DOCUMENTS

6.0 Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 10.

PART 1: Tendering Procedures
Section I – Instructions toTenderers
Section II – Tender Data Sheet (TDS)
Section III- Evaluation and Qualification
Criteria Section IV – Tendering Forms

PART 2: Works'
Requirements Section V -
Bills of Quantities Section VI
- Specifications Section VII -
Drawings

PART 3: **Conditions of Contract and Contract Forms**
Section VIII - General Conditions (GCC)
Section IX - Special Conditions of Contract
Section X- Contract Forms

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit and those of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. Incase of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.3 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

7.0 Clarification of Tender Document, Site Visit, Pre-tender Meeting

7.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the **TDS** or raise its enquiries during the pre-Tender meeting if provided for in accordance with ITT 7.2. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS p**rior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender documents in accordance with ITT 7.4, including a description of the inquiry but without identifying its source. If so specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents following the procedure under

ITT 8 and ITT 22.2.

7.2 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the site(s) of the required contracts and obtain all information that may be necessary for preparing a tender. The costs of visiting the Site shall be at the Tenderer's own expense. The Procuring Entity shall specify in the **TDS** if a pre-arranged Site visit and or a pre-tender meeting will be held, when and where. The Tenderer's designated representative is invited to attend a pre-arranged site visit and a pre-tender meeting, as the case may be. The purpose of the site visit and the pre-tender meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

7.3 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

7.4 Minutes of a pre-arranged site visit and those of the pre-tender meeting, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents. Minutes shall not identify the source of the questions asked.

7.5 TheProcuring Entity shall al so promptly publish anonymized (*no names*) Minutes of the pre-arranged site visit and those of the pre-tender meeting at the web page identified in the **TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-arranged site visit and those of the pre-tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 8 and not through the minutes of the pre-Tender meeting. Non-attendance at the pre-arranged site visit and the pre-tender meeting will not be a cause for disqualification of a Tenderer.

8.0 Amendment of Tender Documents

8.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tender Documents by issuing addenda.

8.2 Any addendum issued shall be part of the Tender Documents and shall be communicated in writing to all who have obtained the Tender Documents from the Procuring Entity. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 7.5.

8.3 To give Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity should extend the dead line for the submission of Tenders, pursuant to ITT 22.2.

C. PREPARATION OF TENDERS

9. Cost of Tendering

The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

10.0 Language of Tender

The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language**,** in which case, for purposes of interpretation of the Tender, such translation shall govern.

11.0 Documents Comprising the Tender

11.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 12;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;
d) Alternative Tender, if permissible, in accordance with ITT 13;
e) ***Authorization****:* written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordancewithITT20.3;
f) *Qualifications:* documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to per form the Contract if its Tender is accepted;
g) *Conformity:* a technical proposal in accordance with ITT 16;
h) Any other document required in the **TDS.**

11.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed JV Agreement. Change of membership and conditions of the JV prior to contract signature will render the tenderliable for disqualification.

12.0Form of Tender and Schedules

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant form*s* furnished in Section IV, Tendering Forms. The forms must be completed with out any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

12.2 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

13. Alternative Tenders

13.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **TDS**, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

13.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

13.4 When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

14.0 Tender Prices and Discounts

14.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Billof Quantities shall conform to the requirements specified below.

14.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity.

An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12.1, shall be the total price of the Tender, including any discounts offered.

14.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 12.1.

14.5 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except incases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

14.6 Where tenders are being invited for individual lots (contracts)or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are opened at the sametime.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

15.0 Currencies of Tender and Payment

15.1 The currency(ies) of the Tender and the currency(ies) of payments shall be the same**.**

15.2 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings.

a) A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya (referred to as "the foreign currency requirements") shall (if so allowed in the **TDS**) indicate in the Appendix to Tender the percentage(s) of the Tender Price (excluding Provisional Sums), needed by the Tenderer for the payment of such foreign currency requirements, limited to no more than two foreign currencies.

b) The rates of exchange to be used by the Tenderer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Tenderer in the Appendix to Tender and shall be based on the exchange rate provided by the Central Bank of Kenya on the date 30 days prior to the actual date of tender opening. Such exchange rate shall apply for all foreign payments under the Contract.

15.3 Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data in the Appendix to Tender are reasonable, in which case a detailed break down of the foreign currency requirements shall be provided by Tenderers.

16.0 Documents Comprising the Technical Proposal

The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tender Forms, insufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer

17.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

17.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

17.3 If a marg in of preference applies as specified in accordance with ITT 33.1, nation al tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

17.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

17.5 The purpose of the information described **in ITT 17.4** above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

17.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to owner ship and control which in formation on any changes to the information which was provided by the tenderer under ITT 6.4. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

17.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

17.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, iftheProcuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

17.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

i) If the procurement process is still ongoing, the tenderer will bed is qualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set as idepending the outcome of (iii),

iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other person shave committed any criminal offence.

17.10 If a tenderer submits information pursuant to these requirements that is in complete, in accurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 17.8 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tender.

18.0 Period of Validity of Tenders

18.1. Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring

Entity in accordance with ITT 22). At ender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

18.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may requestTendererstoextendtheperiodofvalidityoftheirTenders.Therequestandtheresponsesshallbemade in writing. If a Tender Security is requested in accordance with ITT 19, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tendersecurity.ATenderergrantingtherequestshallnotberequiredorpermittedtomodifyitsTender.

19.0 Tender Security

19.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency **specified** in the **TDS**. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms.

19.2 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:

I) cash;

ii) a bank guarantee;

iii) a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority;

(iv) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.

19.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 18.2.

19.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

19.5 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the TDS. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive or a bidder declines to extend tender validity period.

19.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the TDS.

19.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

a) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension there to provided by the Tenderer; or

b) if the successful Tenderer fails to: -

i) signthe Contract in accordance with ITT47; or

ii) furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.

19.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA to debars the Tenderer from participating in public procurement as provided in the law.

19.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.

19.10 A tenderer shall not issue a tender security to guarantee itself.

20.0 Format and Signing of Tender

20.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 13, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the origin a landthe copies, the original shall prevail.

20.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

20.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the**TDS** and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

20.4 Incase the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. SUBMISSION AND OPENING OF TENDERS

21.0 Sealingand Marking of Tenders

21.1 The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

a) in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT 11; and

b) in a nenvelope or package or container marked "COPIES", all required copies of the Tender; and

c) if alternative Tenders are permitted in accordance with ITT 13, and if relevant:

   i) in an envelope or package or container marked "ORIGINAL –ALTERNATIVE TENDER", the alternative Tender; and

   ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) bear the name and address of the Procuring Entity,

b) bear the name and address of the Tenderer; and

c) bear the name and Reference number of the Tender.

21.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders misplaced or opened prematurely will not be accepted.

22.0 Deadline for Submission of Tenders

22.1 Tenders must be received by the Procuring Entity at the address specified in the **TDS** and no later than the date andtimealsospecifiedinthe **TDS.** When so specified in the **TDS**, tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.

22.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the TenderDocumentsinaccordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall there after be subject to the deadline as extended.

23.0 Late Tenders

The Procuring Entity shall not consider any Tender that arrives after the deadline for submissionof tenders, in accordance with ITT 22. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

24.0 Withdrawal, Substitution, and Modification of Tenders

24.1 A Tenderer may withdraw, substitute, or modify its Tenderafterith as been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 20 and ITT 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and

b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 22.

24.2 Tenders requested to be withdrawn in accordance with ITT 24.1 shall be returned unopened to the Tenderers.

24.3 No Tender may be withdrawn, substituted, or modified 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 Form of Tender or any extension thereof.

25. Tender Opening

25.1 Except in the cases specified in ITT 23 and ITT 24.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified **in the TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 22.1, shall be as specified in the **TDS.**

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

25.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

25.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorizationtorequestthemodificationandisreadoutatTenderopening.

25.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

25.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bill of Quantities (to be decided on by the tender opening committee) are to be initialed by the members of the tender opening committee attending the opening.

25.7 At the Tender Opening, the Procuring Entitys hall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).

25.8 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum: -

a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
b) the Tender Price, per lot (contract) if applicable, including any discounts;
c) any alternative Tenders;
d) the presence or absence of a Tender Security, if new as required;
e) number of pages of each tender document submitted.

25.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers.

E. EVALUATION AND COMPARISON OF TENDERS

26. Confidentiality

26.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderersorany other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 43.

26.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

26.3 Not withstanding ITT 26.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any matter related to the tendering process, it shall do so in writing.

27.0 Clarification of Tenders

27.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for aresponse. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shallnot be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 31.

27.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

28.0 Deviations, Reservations, and Omissions

28.1 During the evaluation of tenders, the following definitions apply: -

a) *"Deviation"* is a departure from the requirements specified in the tender document;

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

29.0 Determination of Responsiveness

29.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 11.

29.2 A substantially responsive Tender is one that meets the requirements of the Tender document withoutmaterial deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

a) Affec tin any substantial way the scope, quality, or performance of the Works specified in the Contract;
b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract;
c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsivetenders.

29.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 16, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30.0 Non-material Non-conformities

30.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

30.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non- conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

30.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable non-material non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the TDS.**

31.0 Arithmetical Errors

31.1 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.

31.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis: -

a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualificationofthetenderasnon-responsive.
b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bidpriceshallbe considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and
c) if there is a discrepancy between words and figures, the amount in words shall prevail

31.3 Tenderers shall be notified of any error detected in their bid during the notification of award.

32.0 Conversion to Single Currency

For evaluation and comparison purposes, the currency(ies) of the Tender shall be converted in to a single currency asspecified in the **TDS**.

33.0 Margin of Preference and Reservations

33.1 A margin of preference may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.

33.2 A margin of preference shall not be allowed unless it is specified so in the **TDS**.

33.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 33.4.

33.4 Where it is intended to reserve a contract to as pecific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

34.0 Nominated Subcontractors

34.1 Unless otherwise stated in the **TDS,** the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. Incase the ProcuringEntity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.

34.2 Tenderers may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the **TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.

34.3 Domestic subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated so by the Procuring Entity in the **TDS** a scan be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractorsproposed by the Tenderer may be added to the qualifications of the Tenderer.

35. Evaluation of Tenders

35.1 TheProcuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine theLowest Evaluated Tender in accordance with ITT 40.

35.2 To evaluate a Tender, the Procuring Entity shall consider the following:

a) priceadjustment in accordance with ITT 31.1 (iii); excluding provisional sums and contingencies, if any, but including Daywork items, where priced competitively;

b) price adjustment due to discounts offered in accordance with ITT 14.4;

c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 32;

d) pricea djustment due to quantifiable non materialnon-conformities in accordance with ITT 30.3; and

e) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be consideredin Tender evaluation.

35.4 Where the tender involves multiple lots or contracts, the tenderer will be allowed to tender for one or more lots (contracts). Each lot or contract will be evaluated in accordance with ITT 35.2. The methodology to determine the lowest evaluated tenderer or tenderers base done lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be will be required to prepare the Eligibility and Qualification Criteria Form for each Lot.

36.0 Comparison of tenders

The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.2 to determine the Tender that has the lowest evaluated cost.

37.0 Abnormally low tenders and abnormally high tenders

Abnormally LowTenders

37.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderersis compromised.

37.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any otherrequirements of the Tender document.

37.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

Abnormally high tenders

37.4 Anabnormally high tender price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

37.5 Incase of a nab normally high price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not a ccept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

37.6 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent

Government Agencies to institute an investigation on the cause of the compromise, before retendering.

38.0 Unbalanced and/ or front-loaded tenders

38.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or frontloaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

38.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

a) accept theTender;

b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price;

c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works;

d) reject the Tender,

39.0 Qualifications of the tenderer

39.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 17. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Sub-contractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

39.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the ProcuringEntityshallproceedto the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

40.0 Lowest evaluated tender

Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Lowest Evaluated Tender. The Lowest Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:

a) Mostresponsive to the Tender document; and

b) the lowest evaluated price.

41.0 Procuring entity's right to accept any tender, and to reject any or all tenders.

The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without there by incurring any liability to Tenderers. Incase of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. AWARD OF CONTRACT

42.0 Award criteria

The Procuring Entity shall award the Contract to the successful tenderer whose tender has been

determined to be the Lowest Evaluated Tender.

43.0 Notice of Intention to Enter into a Contract/Notification of Award

Uponaward of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract/Notification of award to all tenderers which shall contain, at a minimum, the following information:

a) the name and address of the Tenderer submitting the successful tender;
b) the Contract price of the successful tender;
c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
d) the expiry date of the Standstill Period; and
e) instruction son how to request a debriefing and/ or submit a complaint during the stand still period;

44.0 Stand still Period

44.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

44.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter into a Contract with the successful Tenderer.

45.0 Debriefing by The Procuring Entity

45.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

45.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

46.0 Letter of Award

Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed with in the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

47.0 Signing of Contract

47.1 Upon the expiry of the fourteen days of the Notification of Intention to enter in to contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

47.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and returnittotheProcuringEntity.

47.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period.

48.0 Performance Security

48.1 Within twenty-one (21) days of the receipt of the Letter of Award from the Procuring Entity, the

successful Tenderer shall furnish the Performance Security and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 38.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

48.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and otherdocuments required in the **TDS** or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

48.3 Performance security shall not be required for contracts estimated to cost less than the amount specified inthe Regulations.

49.0 Publication of Procurement Contract

Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

a) name and address of the Procuring Entity;
b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;
c) the name of the successful Tenderer, the final total contract price, the contract duration;
d) dates of signature, commencement and completion of contract;
e) names of all Tenderers that submitted Tenders, and their Tender prices as readout at Tender opening.

50.0 Procurement related Complaints and Administrative Review

50.1 The procedures for making Procurement-related Complaints are as specified in the **TDS.**

50.2 A request for administrative review shall be made in the form provided under contract forms.

Section II - Tender Data Sheet (TDS)

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions herein shall prevail over those in ITT.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
A. General	
ITT 1.1	The name of the contract is **Dadajabula Solar PV Mini Grid, In Wajir South Constituency, Wajir County.** The reference number of the Contract is **RFX No. 1000000791** The number and identification of lots (contracts) comprising this Tender are **RFX No. 1000000791; Dadajabula Solar PV Mini Grid, In Wajir South Constituency, Wajir County.**
ITT 2.4	The Information made available on competing firms is as follows: As per the tender document
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: None
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: ***Two***
B. Contents of Tender Document	
ITT 7.1	(i) The Tenderer will submit any request for clarifications in writing at the Address **tenders@rerec.co.ke** Attention: **Chief Executive Officer** Kawi House, South C, P.O. Box 34585, 00100 **Nairobi, Kenya** **e-mail: info@rerec.co.ke; tenders@rerec.co.ke** to reach the Procuring Entity not later than 7 days to tender closing (ii) The Procuring Entity shall publish its response at the website www.rerec.co.ke
ITT 7.2	(A) A pre-arranged pretender site visit *"shall not"* take place at the following date, time and place: (B) Pre-Tender meeting *"shall not"* take place at the following date, time and place:
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than none before the meeting.
ITT 7.5	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is none
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: (1) Name of Procuring Entity Rural Electrification and Renewable Energy Corporation (2) Physical address for hand Courier Delivery to an office or Tender Box (City, Street, Building, Floor Number and Room) P.O. Box 34585, 00100 Ground Floor Kawi House, South C, **Nairobi, Kenya**

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	e-mail: info@rerec.co.ke; tenders@rerec.co.ke (3) Postal Address P.O. Box 34585, 00100 Nairobi (4) Insert name, telephone number and e-mail address of the officer to be contacted. **Chief Executive Officer** Kawi House, South C, P.O. Box 34585, 00100 **Nairobi, Kenya** **e-mail: info@rerec.co.ke; tenders@rerec.co.ke;**
C. Preparation of Tenders	
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: *As per evaluation criteria*
ITT 13.1	Alternative Tenders *"shall not be"* considered.
ITT 13.2	Alternative times for completion *"shall not be"* permitted.
ITT 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: None
ITT 14.5	The prices quoted by the Tenderer shall be: fixed
ITT 15.2 (a)	Foreign currency requirements **allowed.**
ITT 18.1	The Tender validity period shall be 140 days.
ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be 30 days. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By *zero* % of t*he local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *and* *(ii) By zero % the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.*
ITT 19.1	Tender shall provide **a Tender Security** The type of Tender security shall be bank security in the amount of Kenya shillings 2,500,000.00.
ITT 20.1	In addition to the original of the Tender, the number of copies is: none
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: A written Power of Attorney, commissioned by commissioner of oaths, or a Magistrate of the Kenyan Judiciary signed and stamped by company directors including the specimen signature of the Authorized person.
D. Submission and Opening of Tenders	
ITT 22.1	(A) For Tender submission purposes only, the Procuring Entity's address is: (1) Name of Procuring Entity: Rural Electrification and Renewable Energy Corporation (2) Postal Address: P.O Box 34585 – 00100 Nairobi (3) Physical address for hand Courier Delivery to an office or Tender Box (City, Street, Building, Floor Number and Room) **Chief Executive Officer** Kawi House, South C, P.O. Box 34585, 00100 **Nairobi, Kenya** **e-mail: info@rerec.co.ke; tenders@rerec.co.ke;**

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	(4) Date and time for submission of Tenders **07.04.2022 @ 10.00am** (5) Tenders shall **submit** tenders electronically.
ITT 25.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided below: (1) Name of Procuring Entity: Rural Electrification and Renewable Energy Corporation (2) Physical address for the location (City, Street, Building, Floor Number and Room) **Chief Executive Officer** Kawi House, South C, P.O. Box 34585, 00100 **Nairobi, Kenya** **e-mail: info@rerec.co.ke; tenders@rerec.co.ke;** (3) State date and time of tender opening. **07.04.2022 @ 10.00am**
ITT 25.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **specified below** (a) Login to REREC portal via url https://suppliers.rea.co.ke:44300/irj/portal **N/B:** It is assumed that you have already completed the registration process and that your registration has been approved by REREC and you have created an employee user account to transact with REREC via url; https://suppliers.rea.co.ke:44200/supportal(bD1lbiZjPTUwMCZkPW1pbg==)/bsp application.do#VIEW_ANCHOR-ROS_TOP **For the purpose of bidding, each firm must ensure the following** • Each company must have two user accounts; **Admin Account and Employee Account**. Ensure that the following roles are **NOT ASSIGNED** to the employee; **Employee Administrator and Supplier Master Data manager**. • Ensure that the admin account and employee account does not share same email address • Ensure that the Employee user name is between 4 and 12 characters. • For the purpose of this tender bidding, **the employee account** shall be used to submit your RFX responses. (b) Choose RFx and Auction link in the navigation pane (c) Click on the RFx number to open it (d) Click Register and then Click Participate (e) Click Create response; You will get a unique number for your response for the RFx (f) Navigate to the Notes and Attachments tab and click on Collaboration link at the bottom of the screen (the link will be in the format "RFX Response No: Company Name". If under your notes and attachment no link is formed in the collaboration room, you are advised to delete the response and create a new one until the link is formed, in this link all the documents of the tender shall be uploaded. ***NB:* All supplier bid documents/Responses shall be uploaded to the COLLABORATION ROOM in the link with "RFX Response Number: Company Name". Bidders shall not attach their documents at any other Tab of the Portal.**

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	Attachments placed elsewhere in the portal shall be declared non-responsive and the attachments shall not be evaluated. You are to login to the collaboration link and upload all the required documents; (g) Enter bid price in the item tab and fill in all required information for the response. This price shall be read out price during the opening. **(h) No value shall be entered under the RFX information "Target Value for RFX"** (i) Check for errors by clicking the Check button Click on Save to review later or Submit to send the response to REREC
E. Evaluation, and Comparison of Tenders	
ITT 30.3	The adjustment shall be based on the *average* price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
TT 32.1	The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: Kshs. The source of exchange rate shall be: **The Central bank of Kenya** (mean rate) The date for the exchange rate shall be*:* **the deadline date for Submission of the Tenders.** *For comparison of Tenders, the Tender Price, corrected pursuant to ITT 31, shall first be broken down into the respective amounts payable in various currencies by using the selling exchange rates specified by the Tenderer in accordance with ITT 15.1.* *In the second step, the Procuring Entity will convert the amounts in various currencies in which the Tender Price is payable (excluding Provisional Sums but including Daywork where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and, on the date, stipulated above.*
ITT 33.2	A margin of preference *"shall not"* apply. *[If a margin of preference applies, the application methodology shall be defined in Section III – Evaluation and Qualification Criteria.]*
ITT 33.4	The invitation to tender is extended to the following group that qualify for Reservations *These groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be; describe precisely which group qualifies).*
ITT 34.1	At this time, the Procuring Entity *"does not intend"* to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: *zero % of the total contract amount.* Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	*[Indicate N/A if not applicable]* The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: N/A

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 35.2 (e)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 48.1	Other documents required in addition to the Performance Security are All risk insurance bond
ITT 50.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: For the attention: Mr. Peter K. Mbugua Title/position: Chief Executive Officer Procuring Entity: *Rural Electrification and Renewable Corporation* Email address*: info@rerec.co.ke and tenders@rerec.co.ke* In summary, a Procurement-related Complaint may challenge any of the following: **1.** the terms of the Tendering Documents; and the Procuring Entity's decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1.0 GENERAL PROVISIONS

1.1 This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. Rural Electrification and Renewable Energy Corporation shall use **the Standard Tender Evaluation Document for Goods and Works** for evaluatingTenders.

1.2 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.

b) Value of single contract - Exchange rate prevailing on the date of the contract signature.

(c) Exchange rates shall be taken from the publicly available source identified in the ITT 14.3. Any error in determining the exchange rates in the Tender may be corrected by Rural Electrification and Renewable Energy Corporation.

EVALUATION AND CONTRACT AWARD CRITERIA

TheProcuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that(i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF RESPONSIVENESS

Preliminary examination for Determination of Responsiveness

Rural Electrification and Renewable Energy Corporation will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other mandatory requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements provided for in the preliminary evaluation criteria outlined below. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered non-responsive and will not be considered further.

TENDER EVALUATION (ITT 35)

Price evaluation: in addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply:

Alternative Completion Times, if permitted under ITT13.2, will be evaluated as follows: None

Alternative Technical Solutions for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows: None

Other Criteria; if permitted under ITT 35.2(j): None

The following shall be evaluation criteria to be used in the tender evaluation

1. **PRELIMINARY EVALUATION**

The following are the **MANDATORY Requirements** that **SHALL** constitute the evaluation criteria at the Preliminary Evaluation Stage:

1) Confirmation that bidder documents/Attachments have been submitted in the Collaboration folder of the SAP SRM System.
2) Confirmation that the bidder's prices appear during tender opening. The entered prices in the Items Tab of the SRM Portal must be same as the prices in the Tender form/price schedules and the same prices are read out during opening. (award shall be based on the read out prices)

3) Confirmation of submission of Tender Security from a local Bank inform of either; Bank guarantee or Bankers' cheque or Insurance Guarantee (Insurance issuing the guarantee must be part of the Public Procurement Regulatory Authority (PPRA) approved list, which validity shall be at least 168 days from the date of tender opening. Tender security value. Tender security value SHALL be Kshs. 2,500,000.00.
4) The tenderer SHALL attach copies of: Certificate of Incorporation of Business, Copy of E-PIN Certificate with both VAT and Income Tax Obligations. Valid Tax Compliance Certificate at the time of tender submission, CR 12 Certificate issued not more than 3 months from the date of Tender closing
5) Copy of Business Permit in the County of Operation
6) Power of Attorney Notarized by a Magistrate or Commissioner of Oath Indicating the Authorized signatory for the documents of the bidder.
7) The tenderer SHALL dully fill all the Standard Forms in the document in the format provided. Confirmation of tender validity period. Tenders SHALL be valid for at least 140 days from the date of tender opening.
8) The tenderer SHALL dully fill the Form of Tender. The tenderer must submit complete and signed forms attached to the form of tender as per the instructions provided
9) The tenderers SHALL submit drawings and specifications of system configuration, Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment, equipment and office housing and all other accessories.
10) The tenderer SHALL submit catalogues and brochures containing technical data as provided in the technical specifications for all main equipment - Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment, and all other accessories. Only one catalogue/brochure to be submitted per equipment.
11) Submission of dully filled Guaranteed Technical Particulars (GTPS) forms
12) Submission of Detailed Mobilization Plan & Detailed Construction Schedule. This should be clear and demonstrate/indicate for each activity for a period not exceeding 40 weeks.
13) Verification of submission of Professional Qualification and experience for key staff, which key staff shall be the Project Supervisor and two (2) Technicians. At least one staff member a registered professional Engineer – Electrical or Mechanical with a T3 license.
14) The tenderer SHALL provide latest Audited financial reports for the last 15 months.
15) The tenderer SHALL submit Manufacturers Authorizations & Warranty form on manufacturer's letterhead signed and stamped for main equipment – Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment and all other accessories.
16) Submission of manufacturers contact details including a valid official email address (gmail or yahoo email address will not be accepted) and website for international companies (MUST be an https)
17) The tenderer SHALL provide details of experience and past performance on works of a similar nature within the past five years and details of current work on hand and other contractual commitments. The tenderer to attach at least 3 completion certificates from the owner of the works undertaken. The Applicants should have at least 2 years past experience in relevant works.
18) Confirmation of business Premise, workshops and service center with relevant tools and equipment whether owned or leased with evidence of valid lease agreements and OSHA registration of workplace certificate.
19) Submission of valid EPRA electrical - Company's Valid EPRA solar license Class C1 or V1
20) Submission of valid NCA 7 and above – electrical or Mechanical services with solar.
21) Manufacture's ISO9001:2015 certificate for quality management OR KEBS certification for the key equipment i.e, - Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment and all other accessories should be valid.
22) Manufacturers ISO14001 certificate OR NEMA license for key equipment - Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment and all other accessories Solar PV modules, Batteries, Hybrid inverter, Energy Meter, generators, transformer, switchgear, battery charger, outdoor equipment and all other accessories should be valid.
23) Submission of evidence of an established up to date safety program, policies and work practices. Bidder to provide a written occupational health and safety policy.
24) Confirmation that the contractor has no REREC pending works beyond the project implementation period provided in the contract. This is a mandatory fulfillment and a bidder who fails on this parameter shall be deemed non responsive.

NB: Tenders which do not satisfy any of the requirements set out above shall be rejected as per public procurement and disposal Act, 2015 and will not proceed to technical evaluation stage.

TECHNICAL EVALUATION

The following SHALL constitute the evaluation criteria at the Technical Evaluation stage:

1. Full compliance to Technical specifications for key equipment. This is a mandatory fulfillment and a bidder who fails on any of the critical parameters shall be deemed non responsive. Only one brochure / technical specification per equipment should be offered, bids with more than one brochure / technical specifications per equipment will be considered non-responsive. The Corporation may at its own discretion verify manufacturers authorizations and warranty.
2. Verification of Professional Qualification and experience for key staff, which key staff shall be the Project Supervisor, two (2) Technicians. The Project Supervisor shall have at least a degree in Electrical or Mechanical Engineering or Renewable Energy and Registered with EBK as a professional engineer and with at least five (5) years of experience. The technicians shall have at least a Diploma in Engineering with a minimum of two (2) years of experience. Signed CV's by the technicians and the owner/director and Certified copies of Certificates MUST be submitted. At least one staff member a registered professional Engineer – Electrical or Mechanical with a T3 license.
3. Verification of relevant Drawings and Technical Data of system configuration generators, transformer, switchgear, battery charger, outdoor equipment and all other accessories. The Drawings should be legible and the dimensions should be clearly marked.
4. Verification of detailed Mobilization Plan & Detailed Construction Schedule. This should be clear and demonstrate/indicate for each activity for period not exceeding 40 weeks.
5. Verification of previous works undertaken. The tenderer to attach at least 3 completion certificates from the owner of the works undertaken

NB: Tenders which do not satisfy any of the requirements set out above shall be rejected as per public procurement and disposal Act, 2015 and SHALL not proceed to financial evaluation stage.

FINANCIAL EVALUATION

The following constituted the evaluation criteria at the Financial Evaluation stage:-

i. The Procuring Entity SHALL apply the prevailing mean exchange rate at the time of tender opening for purposes of conversion of tender currencies into one common currency for comparison of unit prices. The source of the prevailing exchange rate shall be the Central Bank of Kenya
ii. Confirmation that the bidder has quoted his prices Delivered Duty Paid, vat inclusive to site outlined in the Schedule of Requirements.
iii. Confirmation of and considering BOQ/Price Schedule duly completed and signed.
iv. Confirmation of tenderer's conformance with REREC delivery schedule in the tender document.
v. Compliance with the stated REREC terms of payments

NB: Tenders which do not satisfy any of the requirements set out above shall be rejected as per public procurement and disposal regulations- 2020.

MULTIPLE CONTRACTS

Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and a lowest evaluated tenderer identified for each Lot. Rural Electrification and Renewable Energy Corporation will select one Option of the two Options listed below for award of Contracts.

OPTION 1

If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

Ifatenderer wins more than one Lot, the tender will be awarded a contract for all won Lots, provided the tenderer meetstheaggregate Eligibility and Qualification Criteria for all the won Lots. The tenderer will be awarded only the combinations for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION2

Rural Electrification and Renewable Energy Corporation will consider all possible combinations of won

Lots [contract(s)] and determine the combination with the lowest evaluated price. Tenders will then be awarded to the Tenderer or Tenderers in the combination provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots.

5.0 ALTERNATIVE TENDERS (ITT 13.1)

Alternative Tenders (ITT 13.1)

Not allowed

MARGIN OF PREFERENCE

If the TDS so specifies, Rural Electrification and Renewable Energy Corporation will grant a margin of preference of fifteen percent (15%) to be loaded on evaluated prices of the foreign tenderers, where the percentage of share holding of Kenyan citizensis less than fifty- one percent (51%).

Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by Rural Electrification and Renewable Energy Corporation, a particular contractor or group of contractors qualifies for a margin of preference.

After Tenders have been received and reviewed by Rural Electrification and Renewable Energy Corporation, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders shall be classified into the following groups:
Group A: tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).

Group B: tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).

All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected foraward. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

Post qualification and Contract ward (ITT 39), more specifically,
In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.
Incase the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings 30Million

Minimum average annual construction turnover of Kenya Shillings*10Million*, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 2 years.

Atleast 3 *number* of contract(s) of a similar nature executed within Kenya, or the East African Community or a broad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings 10 million equivalent.
Contractor's Representative and Key Personnel, which are specified in the criteria

Contractors key equipment listed on the table “Contractor's Equipment” below and more specifically listed as *[specify requirements for each lot as applicable]*_____
Other conditions depending on their seriousness.

History of non-performing contracts**:**
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non- performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last 5 years. The required information shall be furnished in the appropriate form.
Pending Litigation
Financialpositionandprospectivelong-termprofit ability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.
LitigationHistory

There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last 5 years. All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or on going unde rits execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

QUALIFICATION FORM*

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI – 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI – 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI – 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1st January […….].	Form CON-2	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON – 2	
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1st January *2017*	Form CON – 2	
11	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as Kenya Shillings 30 million equivalent for the subject contract(s) net of the Tenderer's other commitments. (ii) The Tenderers shall also demonstrate, to the satisfaction of Rural Electrification and Renewable Energy Corporation, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future	Form FIN – 3.1, with attachments	

1	2	3	4	5
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
		contract commitments. (iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to Rural Electrification and Renewable Energy Corporation, for the last two year years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.		
12	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings 10 million, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5years, divided by 5 years	Form FIN – 3.2	
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last 5 *years]* years, starting 1st January 2017	Form EXP – 4.1	
14	Specific Construction & Contract Management Experience	A minimum number of 3 similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January 2017 and tender submission deadline i.e. (number) contracts, each of minimum value Kenya shillings 5 million or equivalent. [*In case the Works are to be tender as individual contracts under multiple contract procedure, the minimum number of contracts required for purposes of evaluating qualification shall be selected from the options mentioned in ITT 35.4]* The similarity of the contracts shall be based on the following: [*Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics including part of the requirements that may be met by specialized subcontractors, if permitted in accordance with ITT 34.3]*	Form EXP 4.2(a)	

SECTION IV - TENDERING FORMS

QUALIFICATION FORMS

1. FOREIGN TENDERERS 40%RULE

Pursuant to ITT 3.9, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition.

ITEM	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	Sub contracts from Local sources			
1				
2				
3				
4				
5				
C	Local materials			
1				
2				
3				
4				
5				
D	Use of Local Plant and Equipment			
1				
2				
3				
4				
5				
E	Add any other items			
1				
2				
3				
4				
5				
6				
	TOTAL COST LOCAL CONTENT		XXXXX	
	PERCENTAGE OF CONTRACT PRICE			

FORM EQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or fo ralternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

FORM PER -1

Contractor's Representative and Key Personnel Schedule
Tenderers should provide the names and details of the suitably qualified Contractor's Re presentative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.
Contractor' Representative and Key Personnel

1.	**Title of position:** Project Supervisor	
	Name of candidate:	
	Duration of appointment:	
	Time commitment: for this position:	
	Expected time schedule for this position:	
2.	**Title of position:** Technician 1	
	Name of candidate:	
	Duration of appointment:	
	Time commitment: for this position:	
	Expected time schedule for this position:	
3.	**Title of position:** Technician 2	
	Name of candidate:	
	Duration of appointment:	
	Time commitment: for this position:	
	Expected time schedule for this position:	

2. FORM PER - 2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Name of Tenderer

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned…….. *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates)*
Time commitment:	

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Tender evaluation;
(b) result in my disqualification from participating in the Tender;
(c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel: _____ [*insert name*]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

3. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

FORM ELI -1.1 Tenderer InformationForm

Date:_____

ITT No. and title:_____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5 ☐In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing: • Legal and financial autonomy • Operation under commercial law . Establishing that the Tenderer is not under the supervision of Rural Electrification and Renewable Energy Corporation . Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

FORM ELI -1.2

Tenderer's JV Information Form

(to be completed for each member of Tenderer's JV)

Date:_____

ITT No. andtitle:_____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of Rural Electrification and Renewable Energy Corporation, in accordance with ITT 3.5. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

FORM CON –2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____

Date: _____

JV Member's Name_____

ITT No. and title: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January 2017 specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January 2017 specified in Section III, Evaluation and Qualification Criteria, requirement 2.1 ☐ Contract(s) withdrawn since 1st January 2017 specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	**Non-performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)**
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Reason(s) for nonperformance:	
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3. ☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. ☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			
[insert year]	*[insert percentage]*	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Matter in dispute: *[indicate main issues in dispute]* Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]* Reason(s) for Litigation and award decision *[indicate main reason(s)]*	*[insert amount]*

Include details relating to potential bid-rigging practices such as previous occasions where tenders were withdrawn, joint bids with competitors, subcontracting work to unsuccessful tenderers, etc.

5.4 FORM FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

5.4.1. Financial Data

Type of Financial information in_____ (currency)	**Historic information for previous 5** *years,* _____ **(amount in currency, currency, exchange rate*, USD equivalent)**				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

5.4.2 Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (Kenya Shilling equivalent)
1		
2		
3		

5.4.3 Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[1] for the two years required above; and complying with the requirements

[1] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

5.5 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

	Annual turnover data (construction only)		
Year	**Amount Currency**	**Exchange rate**	**Kenya Shilling equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover *			

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

5.6 FORM FIN – 3.3:

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria

Financial Resources		
No.	**Source of financing**	**Amount (Kenya Shilling equivalent)**
1		
2		
3		

5.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

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

Current Contract Commitments					
No.	Name of Contract	Procuring Entity's **Contact Address, Tel,**	**Value of Outstanding Work [Current Kenya Shilling /month Equivalent]**	**Estimated Completion Date**	**Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]**
1					
2					
3					
4					
5					

5.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Page _____of _____pages

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____

Date: _____

JV Member's Name_____

ITT No. and title: _____

Similar Contract No.	**Information**			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Similar Contract No.	**Information**			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				
Similar Contract No.	**Information**			
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:				
1. Amount				
2. Physical size of required works items				
3. Complexity				
4. Methods/Technology				
5. Construction rate for key activities				
6. Other Characteristics				

5.10 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____
Date: _____
Tenderer's JV Member Name: _____
Sub-contractor's Name[2] (as per ITT 34): _____
ITT No. and title: _____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: _
_____

	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)		Percentage participation (ii)	Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

[2] If applicable

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	

2. Activity No. Two
3. ……

OTHER FORMS

6. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.

ii) Allitalicized text is to help Tenderer in preparing this form.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.

iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.

- *Tenderer's Eligibility- Confidential Business Questionnaire*
- *Certificate of Independent Tender Determination*
- *Self-Declaration of the Tenderer*

Date of thisTender submission…….

Request for Tender No.: …… Name and description of Tender

…… ……

Alternative No.: ……

To: *[insert complete name of Procuring Entity]*

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum[3] of Kenya Shillings [*[Amount in figures]* _____Kenya Shillings *[amount in words]*_____

   The above amount includes foreign currency[4] amount (s) of [*state figure or a percentage and currency*] [figures]_____[words] _____
   _____

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Special Conditions of Contract.

3. We agree to adhereby this tender until_____*[Insert date],* and it shall remain binding upon us and may be accepted at any time before that date.

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

---

[3] *This sum should be carried forward from the Summary of the Bills of Quantities.*

[4] *The percentage quoted above should not include provisional sums, and not more than two foreign currencies are allowed.*

5. We, the under signed, further declare that:

i) No reservations: We have examined and have no reservations to the tender document, including Addenda issuedinaccordance with ITT 28;

ii) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;

iii) Tender - Securing Declaration: We have not been suspended nor declared ineligible by Rural Electrification and Renewable Energy Corporation based on execution of a Tender-Securing or Proposal-Securing Declaration in Rural Electrification and Renewable Energy Corporation's Country in accordance with ITT 19.8;

iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*

v) Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

vi Option 1, incase of one lot: Total priceis: …… ……; or

Option2, in case of multiple lots:

(a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and

(b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

vii) Discounts: The discounts offered and the methodology for their application are:

viii) The discounts offered are:……

ix) The exact method of calculations to determine the net price after application of discounts is shown below: ……..

x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

xi) Performance Security: If our Tender is accepted, we commit to obtaina Performance Security in accordance with the Tendering document;

xii) One Tender Per Tender: Weare not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a sub-contractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;

xiii) Suspension and Debarment: We, along with any of our subcontractors, suppliers, Engineer, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.

xiv) State-owned enterprise or institution: [*select the appropriate option and delete the other*] [*We are not a state- owned enterprise or institution*]/[*We are a state-owned enterprise or institution but meet the requirements of ITT3.8*];

xv) Commissions, gratuities, fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

xvi) Binding Contract: We understand that this Tender, together with your written acceptance there of included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

xvii) Not Bound to Accept: We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;

xviii) Fraud and Corruption: We here by certify that we have taken steps to ensure that no personacting for us or on our behalf engages in any type of Fraud and Corruption; and

xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent Tender Determination" attached below.

xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from www.ppra.go.ke during the procurement process and the execution of any resulting contract.

xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:

a) Tenderer's Eligibility; Confidential Business Questionnaire - to establish we are no tin any conflict to interest.

(b) Certificate of Independent Tender Determination - to declare that we completed the tender without colluding with other tenderers.

(a) Self-Declarationo f the Tenderer - to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.

(d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1 - Fraud and Corruption**" attached to the Form of Tender.

Name of the Tenderer: *[*insert complete name of person signing the Tender*]

Name of the person duly authorized to sign the Tender on behalf of the Tenderer: **[*insert complete name of person duly authorized to sign the Tender*]

Title of the person signing the Tender: [*insert complete title of the person signing the Tender*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]

Date signed [*insert date of signing*] day of [*insert month*], [*insert year*]

Datesigned_____dayof_____,_____

Notes

** In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer.*

***Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

(a) **TENDERER'S ELIGIBILITY-CONFIDENTIAL BUSINESS QUESTIONNAIRE**

Instruction to Tenderer

Tender is in structed to complete the particulars required in this Form, *one form for each entity if Tender is a JV.* Tenderer isfurtherreminded that it is an offence to give false information on this Form.

(a) Tenderer'sdetails

	ITEM	**DESCRIPTION**
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

(b) Sole Proprietor, provide the following details.

Name in full_____Age_____
Nationality_____Country of Origin_____
Citizenship_____

(c) Partnership, provide the following details.

	Names of Partners	**Nationality**	**Citizenship**	**% Shares owned**
1				
2				
3				

(d) Registered Company, provide the following details.

I) Private or public Company _____
ii) State the nominal and issued capital of the Company_____

Nominal Kenya Shillings (Equivalent).....
Issued Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

	Names of Director	**Nationality**	**Citizenship**	**% Shares owned**
1				
2				
3				

(e) DISCLOSURE OF INTEREST - Interest of the Firm in the Procuring Entity.

i) Are there any person/persons in…… (*Name of Procuring Entity)* who has/have an interest or relationship in this firm? Yes/No……

If yes, provide details as follows.

	Names of Person	**Designation in the Procuring Entity**	**Interest or Relationship with Tenderer**
1			
2			
3			

(i) Conflict of interest disclosure

	Type of Conflict	**Disclosure YES OR NO**	**If YES provide details of the relationship with Tenderer**
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name_____

Titleor Designation_____

_____ _____

(Signature) *(Date)*

CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the _____ *[Name of Procuring Entity]* for: _____ *[Name and number of tender]* in response to the request for tenders made by: _____ *[Name of Tenderer]* do hereby make the following statements that I certify to be true and complete in every respect:

Icertify, on behalf of _____ *[NameofTenderer]*that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. Iamthe authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:

   a) Has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;

5. TheTenderer discloses that [check one of the following, as applicable a or b]:

   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;

   b) theTenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. Inparticular, without limiting the generality of paragraphs (5)(a) or(5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intentiono r decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuan tto paragraph (5)(b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant toparagraph(5)(b) above;

8. Thetermsofthe Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichevercomesfirst, unless otherwise required byl aw or as specifically disclosed pursuant to paragraph (5)(b) above.

Name _____
Title _____
Date _____

[Name, title and signature of authorized agent of Tenderer and Date]

SELF- DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.

I, ……., of Post Office Box …….……. being a resident of…….. in the Republic of ……. do hereby make a statement as follows: -

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Direct or of ……...…….. *(insert name of the Company)* who is a Bidder in respect of **Tender No.**
   …….. for ……. *(insert tender title/description)* for ……. *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to here in above is true to the best of my knowledge, information and belief.

…… …….
…… (Title) (Signature)
(Date)

Bidder Official Stamp

FORM SD2

SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.

I, ……of P.O. Box …….....……. being a resident of …….. in the Republic of ……. do hereby make a statement as follows: -

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ……..... (insert name of the Company) who is a Bidder in respect of **Tender No.**…… for …… *(insert tender title/description)* for …… *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT theafore said Bidder, its servants and/oragents/subcontractorswillnotengageinanycorruptorfraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of …… *(insert name of the Procuring entity)* which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of …… *(name of the procuring entity).*

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to here in above is true to the best of my knowledge information and belief.

…… …… …….....……

(Title) (Signature) (Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I ……. (person) on behalf of ***(Name of the Business/ Company/Firm***) .....…….. declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurementand Asset Disposal and my responsibilities under the Code.

I do here by commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory.....

Sign…….....

Position.....

Office address.....

Telephone..... E-

mail…….....

.....

Name of the Firm/Company…….....

Date…….....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name…….....

Sign…….....

Date…….....

APPENDIX 1 - FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

Purpose

1.1 The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

Requirements

1.2 The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

1.3 Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior:

1) A person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or as set disposal proceeding;

2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;

3) Without limiting the generality of the subsection (1) and (2), the person shall be: -

   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or

   b) if a contract has already been entered into with the person, the contract shall be voidable;

4) The voiding of a contract by Rural Electrification and Renewable Energy Corporation under subsection (7) does not limit any legal remedy Rural Electrification and Renewable Energy Corporation may have;

5) An employee or agent of Rural Electrification and Renewable Energy Corporation or a member of the Board or committee of Rural Electrification and Renewable Energy Corporation whohas a conflict of interest with respect to a procurement: -

   a) Shall not take part in the procurement proceedings;

   b) shall not, after a procurement contract has been entered in to, take part in any decision relating to the procurement or contract; and

   c) shall not be a subcontract or for the tender to whom was awarded contract, or a member of the group of tenderers to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflictofinteresttotheprocuringentity;

7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection

(5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

2. In compliance with Kenya's laws, regulations and policies mentioned above, Rural Electrification and Renewable Energy Corporation:

a) Defines broadly, for the purposes of the above provisions, the terms setf orth below as follows:

i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
ii) "fraudulent practice" is any act or omission, including is representation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
iii) "collusive practice"is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party; "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
iv) "obstructive practice" is:

- Deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal processorthe exercise of a contract to the detriment of Rural Electrification and Renewable Energy Corporation or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive Rural Electrification and Renewable Energy Corporation of the benefits of free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring(i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their

Applications/Tenders/Proposals a “Self-Declaration Form” as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

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[1] *For the avoidance of doubt, a party's in eligibility to be awarded a contract shall includee, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.*

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, suc has evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copyor electronic format) deemed relevant for th einvestigation/audit, and making copies there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

FORM OF TENDER SECURITY-**[**Option 1–Demand Bank Guarantee**]**

Beneficiary:_____ Request forTenders No:____Date:_____ TENDER GUARANTEE No.:

Guarantor: _____

1. We have been informed that_____(here inafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here inafter called" the Tender") for the execution of_____ under Request for Tenders No. ("the ITT").

2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(__) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above onor before that date.

_____

[signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas …… [*Name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated …… [*Date of submission of tender]* for the …… *[Name and/or description of the tender]* (hereinafter called "the Tender") for the execution of____under Request for Tenders No.___ (the ITT").

2. KNOW ALL PEOPLE by these presents that WE …… of …… [**Name of Insurance Company**] having our registered office at …… (hereinafter called "the Guarantor"), are bound unto …….. [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of …… (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

Sealed with the Common Seal of the said Guarantor this ___day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:

   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or

   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

   then the guarantee undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii)twenty-eight days after the end of the Tender Validity Period.

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

_____	_____
[Date]	*[Signature of the Guarantor]*
_____	_____
[Witness]	*[Seal]*

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORM OF TENDER - SECURING DECLARATION

[The Bidder shall complete this Form in accordance with the instructions indicated]

Date: ..... *[insert date (as day, month and year) of Tender Submission]*

Tender No.: ..... *[insert number of tendering process]*

To: ..... *[insert complete name of Purchaser]* I/We, the undersigned,

declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of ourobligation(s) under the bid conditions, because we–(a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) Our receipt of a copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.

4. I/We understand that if Iam /we are/ in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:……..…….. Capacity/title (director or

partner or sole proprietor, etc.) …….…….....…….

Name:…….. Duly authorized

to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

Dated on ……. day of ……., ……. *[Insert date of signing]* Seal orstamp

Appendix toTender
Schedule of Currency requirements

Summary of currencies of theTender for_____*[insert name of Section of the Works]*

Name of currency	*Amounts payable*
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[*5% of the tender price*]

PART II - WORKS REQUIREMENTS

SECTION V - BILLS OF QUANTITIES

Notes and Sample Items for Preparing a Bill of Quantities

1. These Notes for Preparing a Bill of Quantities are intended only as information for Rural Electrification and Renewable Energy Corporation or the person drafting the Tender Documents. Priced Bills of Quantities shall be part and parcel of the Contract Documents.

2. The objectives and purpose of the Bills of Quantities are to provide sufficient information on the specifications, descriptions and quantities of Works to be performed to enable tenders to be prepared efficiently and accurately and when a contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed. Inorder to attain these objectives, Works should be itemized in the Bill of Quantities insufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried outin different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and clear as possible.

3. The Bills of Quantities should be divided generally into thef ollowing sections:

   a) Preambles
   b) Preliminary items
   c) Work Items
   c) Daywork Schedule; and
   d) Provisionalitems
   e) Summary.

NOTES TO PREPARING PREAMBLES

4.1 The Preambles should include only those items that constitute the cost of the works but would not be priced separately as they are expected to be included in the unit prices. Care should be taken to ensure that these items are not are petition of the conditions of contract. The Preambles should indicate the inclusiveness of the unit prices and should state the methods of measurement that have been adopted in the preparation of the Bill of Quantities, that are to be used for the measurement of any part of the Works. The units of measurement and abbreviations should be defined and any mandatory national units defined and described. The methods of and procedure for re- measurement should be described in the Preambles.

4.2 Units of Measurement - The following units of measurement and abbreviations shall be used, unless other national units are mandatory in Kenya.

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m^3 *or* cu m	millimetre	mm
hectare	ha	month	mon
hour	h	number	nr
kilogram	kg	square meter	m^2 *or* sq m
lump sum	ls	square millimeter	mm^2 *or* sq mm
meter	m	week	wk
metric ton	t		

4.3 The Bills of Quantities shall be read in conjunction with the Instructions to Tenders, General and Special Conditions of Contract, Technical Specifications, and Drawings.

4.4. The quantities given in the Bills of Quantities are estimated and partly provisional and are given to provide a common basis for tendering. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Architect and valued at the

rates and prices tender in the priced Bills of Quantities, where applicable, and otherwise at such rates and prices as the Architect may fix within the terms of the Contract.

4.5. The rates and prices tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

4.6. Arateorprice shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

4.7. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bills of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the ratesand prices entered for the related Items of Work.

4.8. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. References to the relevant sections of the Contract documents shall be made before entering prices agains teach item in the priced Bills of Quantities.

4.9 Provisional Sums and contingency sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Architect in accordance with Sub-Clause13.5 and Clause 13.6 of the General Conditions of contract.

4.10 In preparing the Bills of Quantities, notes should be removed as they are intended to guide the person preparing the Tender Documents. The Contractor must allow in his rates for any costs associated with and complying with the requirements in the Preambles.

4.11 Should a tenderer/contractor not price any item in any section of the Bills of Quantities including Preliminary items, it will be assumed that he/she has spread its cost in other areas that he/she will have priced. Therefore, the itemor items will be executed without any additional costs or without being treated like variations.

NOTES ON PREPARING BILLS OF QUANTITIES

5.1 The Preliminary Items should be limited to tangible items that should be priced by the tenderer, are identifiable and can be priced separately and included in the interim valuations precisely. Such items may include such items as site office, notice boards, and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor's obligations should be included in the Contractor's rates.

5.2 The work items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. Such groups could be ground excavations, structures, external works, services, etc. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.

5.3 Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage or waste. Quantitiesshouldberoundedupwhereappropriate.

5.4 Where the measured items a redeemed not to be exact because of the likelihood that the scope can change during the execution of the works, such items could be subject to re-measurement, the word **"provisional"** should be used to identify such cases. Where whole sections of the work items fall in this class, for example foundations, they should be labelled "Provisional Quantities" or "Provisional Items" so that the Tenderer/Contractor is advised up front that such items are subject to re-measurement to done before such work is cover-up.

5.5 All items that have not been measured and therefore not subject tot enders pricing should be listed in the Bills of Quantities as **Provisional Sums** for particular item or class of Work, which may be subject to a nominated subcontract or separate measurements at a later date during the execution of the works. For example, if it is deemed not possible to measure electrical works before going to tender because detail designs are not ready, a provisional sum can be allowed in the Bills of Quantities for

"Installation of Electrical Works" to be executed later when actual design details are completed. To the extent not covered above, there should be in the Bills of Quantities a general provision for physical and financial contingencies made as a "Provisional Sum for Contingencies" and "Provisional Sum for Fluctuations". The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

5.6 Provisional sums to cover specialized works normally carried out by Nominated Sub Contractors should be avoided and instead Bills of Quantities of the specialized Works should be included as a section of the main Bills of Quantities to be priced by the Main Contractor. The Main Contractor should be required to indicate the name(s) of the specialized firms he proposes to engage to carry out the specialized Works as his approved domestic sub-contractors. Only provisional sums to cover specialized Works by statutory authorities should be included in the Bills of Quantities.

5.7 A Daywork Schedule should be included if the probability of unforeseen work, outside the items included in the Bill of Quantities, is relatively high. To facilitate checking by Rural Electrification and Renewable Energy Corporation of the realism of rates quoted by the tenderers, the Daywork Schedule should normally comprise:

i) A list of the various classes of labor, and materials for which basic.

ii) Daywork rates and prices for various categories of labor are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Daywork basis.

iii) A percent a get o be entered by the tenderer agains teach basic Day work item.

iv) Subtotal amount for labor, materials and plant representing the Contractor's profit, overheads, supervision and other charges.

5.8 The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Daywork, Provisional sums and Contingencies, and provision for Total Costing. The last line should allow for tenderer to indicate any discounts before arriving at a total cost carried forward to the Form of Tender.

BILLS OF QUANTITIES

The Bill of Quantities shall form part of the Contract Documents and is to be read in conjunction with the Instructions to Tenderers, Conditions of Contract Parts I and II, Specifications and Drawings.

The brief description of the items in the Bill of Quantities is purely for the purpose of identification, and in no way modifies or supersedes the detailed descriptions given in the conditions of Contract and Specifications for the full direction and description of work and materials.

The Quantities set forth in the Bill of Quantities are estimated and provisional, representing substantially the work to be carried out, and are given to provide a common basis for tendering and comparing of Tenders. There is no guarantee to the Contractor that he will be required to carry out all the quantities of work indicated under any one particular item or group of items in the Bill of Quantities. The basis of payment shall be the Contractor's rates and the quantities of work actually done in fulfillment of his obligation under the Contract.

The prices and rates inserted in the Bills of Quantities will be used for valuing work executed, and the Engineer will measure the whole of the works executed in accordance with this Contract.

A price or rate shall be entered in ink against every item in the Bill of Quantities with the exception of items, which already have provisional sums, affixed thereto. The Tenderers are reminded that no "nil" or "included" rates or "lump-sum" discounts will be accepted. The rates for various items should include discounts if any. Tenderers who fail to comply will be disqualified.

Provisional sums (including day works) in the Bill of Quantities shall be expended in whole or in part at the discretion of the Engineer in accordance with Sub-clause 52.4 and Clause 58 of part of the Conditions of Contract.

The price and rates entered in the Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional plant to be used, labour, insurance, supervision, compliance, testing, materials, erection, maintenance or works, overheads and profits, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract, transport, electricity and telephones, water, use and replenishment of all consumables, including those required under the Contract by the Engineer and his staff.

The Employer for any arithmetic errors in computation or summation will correct errors as follows:

Where there is a discrepancy between amount in words and figures, the amount in words will govern; and

Where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer, there is an obviously gross misplacement of the decimal point in the unit price, in which event the total amount as quoted will govern and the unit rate will be corrected.

If a Tenderer does not accept the correction of errors as outlined above, his Tender will be rejected.

The Bills of Quantities, unless otherwise expressly stated therein, shall be deemed to have been prepared in accordance with the principles of the latest edition of the Civil Engineering Standard Method of Measurement (CESMM).

"Authorized" "Directed" or "Approved" shall mean the authority, direction or approval of the Engineer.

Unless otherwise stated, all measurements shall be net taken on the finished work carried out in accordance with the details shown on the drawings or instructed, with no allowance for extra cuts or fills, waste or additional thickness necessary to obtain the minimum finished thickness or dimensions required in this Contract. Any work performed in excess or the requirements of the plans and specifications will not be paid for, unless ordered in writing by the Engineer.

Hard material, in this Contract, shall be defined as the material which, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and which cannot be extracted by ripping with a dozer tractor of at least 150 brake horse power (112 kilowatt) with a single, rear-mounted, hydraulic ripper. Boulders of more than $0.2m^3$ occurring in soft material shall be classified as hard material. Soft material shall be all material other than hard material.

The quantities listed hereunder are deemed to be correct but the Contractor is requested to make his own assessment from the documentation supplied and site visits for the purposes of quantifying of materials and pricing. Any price omitted from the items listed shall be deemed to have been included in another.

1. CIVIL WORKS SPECIFICATIONS AND BILL OF QUANTITIES

Tender to provide layout plans and drawings for approval by employer before commencement of construction.

1: FENCE

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
1.2	**Compound Fence**				
1.2.1	Provide all materials and install 2400mm high chain link fence above ground level consisting of 125x125x3000mm overall cranked precast concrete post (mix 1:2:4) to BS 1722 posts with 450mm long cranks at 3.0m centers reinforced with 4 No. 8mm diameter high tensile bars including 6mm diameter stirrups at 300 centers complete with 14 1/2 gauge x6 strand galvanized barbed wire fencing and mortised in mass concrete surround 1:3:6 including all excavations, formwork and disposals	LM	600		
1.2.2	Extra over ditto; for 100x100mm precast concrete struts 2600mm long at every 50m interval.	No	12		
1.3	**Palisade Gate** Supply and fix double leaf steel palisade gate with				
	A passengers' gate including building in lugs and jamb to concrete columns	LM	4.8		
1.4	**Solar PV Generator Yard fence**				
1.4.1	Provide all materials and install 2400mm high chain link fence above ground level consisting of 125x125x3000mm overall cranked precast concrete post (mix 1:2:4) to BS 1722 posts with 450mm long cranks at 3.0m centers reinforced with 4 No. 8mm diameter high tensile bars including 6mm diameter stirrups at 300 centers complete with 14 1/2 gauge x6 strand galvanized barbed wire fencing and mortised in mass concrete surround 1:3:6 including all excavations, formwork and disposals. Allow for 1.5 M pedestrian Gate	LM	312		
1.4.5	Extra over ditto; for 100x100mm precast concrete struts 2600mm long at every 50m interval.	No	7		
	TOTAL CARRIED GRAND SUMMARY				

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
	2: GUARD HOUSE				
2	Erect guard house size 3500x 3000 x 2400 mm high overall dimensions: constructed in reinforced concrete foundations, 200 mm thick masonry walling plastered and painted internally: G28 IT5 Iron sheets on cypress timber understructure; 1 No metallic door(900 x2100 mm): 3No windows; size 900 x1200 mm (see attached drawings				
2.1	Substructure Excavations including maintaining and supporting sides and keeping free from water, mud and fallen material				
	a) Excavate trench for foundation not exceeding 1.50 meters deep, starting from reduced levels	CM	5		
	b) Extra over excavations for excavating in soft rock	CM	3		
2.1.2	Disposal				
	a) Return, fill and ram selected excavated material around foundations.	CM	4		
2.1.3	Hardcore or other approved filling, as described				
	a) 300mm thick well compacted hardcore filling blinded with 25mm thick quarry dust layer to receive surface bed	SM	7		
2.1.4	Anti-termite treatment a) Chemical anti-termite treatment, executed complete				
	by an approved specialist under a ten-year guarantee, to surfaces of hard-core	SM	7		
2.1.5	Damp-proof membrane a) 1000 gauge polythene or other equal and approved				
	damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps)	SM	7		
2.1.6	Plain concrete class 15 in:				
	a) 50mm blinding under foundations	SM	7		
2.1.7	Reinforced concrete class (20) as described, in:-				
	a) Foundations	CM	1		
	b) 150mm thick surface bed .	SM	10		
2.1.8	Reinforcement, as described:				
	High yield square twisted reinforcement bars to B.S 4461 assorted reinforcement ranging from Y8 - Y10	KG	400		
2.1.9	Mesh fabric reinforcement to B.S 4483 and setting in concrete with 300mm side and end laps (measured net allow for laps).				
	Fabric ref. A142 weighing 2.22kg/ sq. metre, in surface bed.	SM	10		
2.1.10	Sawn formwork as described to:-				

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
	To edge of slabs over 75mm but not exceeding 150mm girth	LM	13		
2.1.11	Damp-proof courses, as described, to walls				
	200mm wide	LM	13		
2.2	Reinforced Concrete Frame				
2.2.1	Reinforced concrete class 20, as described in:-				
	Beams	CM	1		
2.2.2	Reinforcement, as described High yield square twisted reinforcement to BS 4461 Assorted reinforce cements ranging from Y8-Y20	KG	250		
2.2.3	Sawn formwork, as described, to: Sides and soffits of beams	SM	40		
2.3 2.3.1	Walling Walling in natural coursed stones fine chiseled obtain from an approved quarry, bedded and jointed in gauged mortar(1:3); 200mm thick walling externally	SM	31		
2.3.2	15MM cement and sand (1:3) render, finished with wood float to:- Concrete or masonry surfaces internally	SM	31		
2.4 2.4.1	Roof construction In sawn treated cypress Grade 2 Common timbers a)150×50mm rafters b) 150×50mm purlins c)100×50mm wall plate fixed with and including 200mm long 12mm diameter rag bolts cast into beam at 750mm centres d)In wrot cypress e) 225×38mm fascia or verge board	 LM LM LM LM	 21 29 14 14		
2.4.2	PVC leaves boarding PVC tounged and grooved eaves boarding in strips on and with plastic vents along eaves at 200mm centres	SM	9		
2.4.3	In wrot cypress 25mm quadrant beading	LM	14		
2.4.4	IT5 Box Profile Roofing Sheets Roof covering not exceeding 45 degrees from horizontal including all necessary fixtures	SM	24		
2.4.5	28 Gauge galvanized steel sheet shaped as required 300mm girth twice bent flashing with one end chased and grouted to wall in cement and sand mortar	LM	12		
2.4.6	Roof drainage 28 Gauge galvanized steel sheet shaped as required	LM	14		

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
	a)200×100mm pressed steel Box gutter with hammerite finish (m.s)including joints in running length fixed to fascia board with and including brackets at rafter centers board with and including brackets at rafter centers	LM	6		
	b)100×100mm pressed steel square downpipe with hammerite finish (m.s) fixed with and including mild steel holderbats plugged and screwed to walls				
2.4.7	28 Gauge galvanized steel sheet shaped as required				
	a)Extra over gutters for 100mm diameter outlet	No	2		
	b)Ditto for 60 degrees bend	No	1		
	c)Ditto stopped end to 200×100m gutter	No	1		
	d)Extra over down pipe for 100mm swan neck bend	No	1		
	e)Ditto for 100mm shoe	No	1		
2.4.8	Painting and decoration				
	a) Knot, prime and stop, prepare and apply two undercoats and one gloss finishing coat enamel paint on wood surfaces. Surfaces over 200mm but not exceeding 300mm girth	LM	7		
	b)prepare, prime and supply one undercoats and two gloss finishing coat enamel paint on the following metal surfaces	LM	2		
	General surfaces of flashings 200-300mm girth				
	c)Prepare and apply three coats of hammerite finish on the following metal surfaces	SM	3		
	General surfaces of gutters and downpipes				
	d)Prepare and apply one coat pinotex stain and two coats polyurethane matt varnish to :-	LM	7		
	Surfaces over 100mm but not exceeding 200mm girth				
	Window	LM	2		
	Quarry tiles window cill to approval:				
2.5	150×25mm thick bedded on cement and sand mortar (1:4) joined and pointed in red oxide grouting				
	Supply and fix the following purpose – made standard 25mm section steel casement windows complete with fixing lugs, inbuilt permanent vents, opening and closing accessories and 20×5mm flat bar burglar proofing grilles to approval:	NO	3		
	Window size 90mm wide×1200mm high	SM	2		

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
	Supply and fix the following glass including glazing I linseed putty: 4mm thick clear glass panes not exceeding 0.1m2				
2,6	Door Steel casement doors	NO	1		
	Supply and fix purpose – made standard 25mm section steel casement folding type single leaf door overall size 900×2100mm high complete with lugs, inbuilt permanent vents, opening and closing accessories to approval.	SM	10		
2.7	Finishes Floor				
	40mm thick cement/sand (1:4) screed : with 'Sika " hardener additive	LM	13		
	Ditto but 150×10mm skirting				
	Walling				
	Externally				
	15mm thick wood float finished render 1:4 below window sill	SM	2		
	Ditto to beams and walls	SM	3		
	Recessed horizontal key pointing to brick walls	SM	32		
	Internally				
	15mm thick two coat lime plaster to walls	SM	32		
	Painting and decoration				
	Preparing and apply three coats plastic silk emulsion paint to:	SM	32		
	Plastered walls internally				
	Prepare and apply three coat matt enamel paint to: General surfaces of metal doors and windows	SM	7		
	Electrical works				
2.8	Provide a prime cost sum for electrical installation and fittings to be carried out by a registered and approved sub-contractor	ITEM			

ITEM	DESCRIPTION	UNITS	QTY	RATE (Kshs)	AMOUNT (Kshs)
	Builders work in connection with electrical installation: Cut away for electrical fittings and conduits: form/leave all holes: chase: etc.: make good after Allow for builders work in connection with electrical installations	ITEM			
	TOTAL CARRIED TO SUMMARY				

3: 2 DOOR VIP LATRINE

Item	Description	Units	Qty	Rate (Kshs)	Amount (Kshs)
3.1	Excavation and Earthworks				
3.1.1	Clear site of all vegetation and small trees and dispose off Bulk excavations	SM	10		
3.1.2	Excavation of a latrine pit not less than 5meters deep Planking and strutting	CM	32		
3.1.3	Allow for Planking and strutting to sides of excavated pits: including removal of fallen materials Water disposal	ITEM	1		
3.1.4	Allow for keeping all excavations from all types of water including rain and spring water by pumping or through any method	ITEM	1		
3.2	Concrete Works				
3.2.1	Supplying and placing of Grade 20 concrete as specified on 100mm thick beds	CM	0.5		
3.2.2	Supplying and placing of Grade 25 concrete as specified in strip footings	CM	1.1		
3.2.3	Ditto: suspended slabs: 100mm thick with a slab. Formwork	CM	1.5		
3.2.4	Formwork as specified to vertical sides of strip footing	SM	2		
3.2.5	Ditto: soffites of suspended slabs	SM	5		
3.2.6	Ditto: edges of floor beds	SM	3		
3.2.7	Boxing Formwork to form opening size 450 x 450mm for manhole	NO	1		
3.2.8	Ditto: opening in slab size 200 x 300mm	NO	2		
3.2.9	Ditto: opening in slab size 110mm dia Reinforcement: (All provisional)	NO	2		
3.2.10	Y12high yield reinforcement bars with 6mm dia links at 200mm c/c.	KG	145		

Item	Description	Units	Qty	Rate (Kshs)	Amount (Kshs)
3.2.11	Lintel size 200 x 150 mm in cross section: including 4No. Y10 bars and R 6 links at 200mm centers complete with all formwork: as per Drawing.	LM	5		
3.3	Masonry Works				
3.3.1	Up to DPC level-Substructure (Lining) 200 mm Thick solid block walls: bedded and jointed in cement and sand (1:4) mortar to lining. Reinforced with hoop iron wall ties at every alternate course	SM	52		
	Concrete block work				
3.3.2	200mm thick walls in blocks in cement sand (1:3) mortar: reinforced with hoop iron wall ties at every alternate course Damp proof course	SM	21		
3.3.3	Horizontal damp proof course: bituminous: laid horizontally on screed 20 mm thick (1:3) screed beds to receive block walls	LM	10		
	Roof structures				
3.3.4	Supply & fix seasoned timber (cypress) for roof trusses(100 x50mm) and purlins (75 x50mm) complete with all the required paint works and all necessary supports	Item	1		
3.4	Roof Covering				
3.4.1	Supplying & fixing of gauge 28 pre-painted IT5 box profiled roofing sheets (0.32mm) of approved colour : Nailed to 75x50 timber purlins *(measured separately)*	SM	6		
	Valance / Barge Board				
3.4.2	25x225mm high timber valance board / barge board Nailed to 75x50 timber purlins: all complete with approved wood preservative as specified and as per	LM	10		
3.5.1	Doors				
	Steel Door: to fit structural opening size 900mm wide x 2100mm high overall, comprising of 50 x 50x4mm Angle iron door frame: including all iron mongery and hardware: fixed to concrete or blockwork: complete with all required painting and decoration.	Nos	1		
3.5.2	Manhole cover				

Item	Description	Units	Qty	Rate (Kshs)	Amount (Kshs)
	Supply and install 450 x 450 mm mild steel man hole cover	NO	1		
3.6	Ventilation				
	Vent pipes				
	Supply and install 2 (two) vent pipes- 110mm dia and at least 300mm above the highest point of the roof	NO	2		
3.7	Finishes				
	Wall Finishes				
	15mm thick wood float finished render 1:4 below window sill	SM	1		
3.7.1	Ditto to lintel and walls	SM	0.5		
	Recessed horizontal key pointing to brick walls	SM	21		
3.7.2	15mm thick two coat lime plaster to walls Floor finishes	SM	21		
3.7.3	40mm Thick cement/sand (1:4) screed: With 'Sika' hardener additive	SM	6		
	Ditto but 150x10mm skirting	SM	5		
3.8	Painting				
3.8.1	Painting and decoration Preparing and apply three coats plastic silk emulsion paint to:	SM	33		
3.8.2	Plastered walls internally Prepare and apply three coat matt enamel paint to:	SM	4		
3.8.3	General surfaces of metal doors	SM	48.2		
	TOTAL CARRIED TO GRAND SUMMARY				

4. CIVIL WORKS - CONTAINER OFFICE, WATER SUPPLY & ACCESS ROAD

ITEM DESCRIPTION UNIT QTY RATE AMOUNT

Item	Description	Units	Qty	Rate (Kshs)	Amount (Kshs)
4.1	Planters or the Like				
4.1.1	Excavate pits 1000X1000X500mm deep :part cart away, part back fill soil and manure mixture in 4.1 ratio	NO	20		
4.1.2	Provide plant well established assorted plants including watering and weeding until well				
	established	NO	20		
4.2	Access road				
4.2.1	Excavate in soil to remove top vegetable soil to 250mm deep	CM	100		
4.2.2	Excavate to reduce levels in sandy soils 400mm deep	CM	150		
4.2.3	Back fill excavated areas with approved hardcore compacted in layers not exceeding 150mm thick to 100% maximum dry density. As base for the access road and parking	CM	200		
4.2.4	Lay murram as finish compacted in layers not exceeding 150mm thick to 100% maximum dry density. With -2.5% camber in the access road to allow for drainage	CM	100		
4.3	Container Yard				
4.3.1	Excavate in soil to remove top vegetable soil to 500mm deep	CM	100		
4.3.2	Back fill excavated areas with approved hardcore compacted in layers not exceeding 150mm thick to 100% maximum dry density. As base for the access road and parking	CM	100		
4.3.3	Supply, Deliver and spread 3/4 Ballast under and around the container (100mm Thick)	CM	60		
4.4	Water Supply				
4.4.1	Supply and installation of One water tanks (Roto or KenTank) incl construction of bases, capacity to be 10,000lts each	No.	1		
4.4.2	Allow for water reticulation from the nearest water source to the site storage tank.	LM	400		
4.4.3	Allow for water reticulation from the storage tank to solar yard area and outside the office, Including installation of 2 taps.	LM	30		
4.5	Office Container				

Item	Description	Units	Qty	Rate (Kshs)	Amount (Kshs)
4.5.1	Supply, deliver and install 20ft container on site and allow for modification of the container to an office including casting stub columns to hold the container (to engineers Approval).	No.	1		
4.5.2	Supply and install a shed of size 8M by 6.5 M to the Office container. The shade to be made of steel hollow sections and IT 4 sheets to engineers approval.	No.	1		
4.5.3	Supply and Install 24” diameter "ORIENT" extract fans, inclusive of all electrical connections	No.	1		
4.6	Furniture				
4.6.1	One office Table	No.	1		
4.6.2	Chairs	No.	4		
4.6.3	Storage Cabinet (Metal Drawers) Control house	No.	1		
4,7	Excavate in soil to remove top vegetable soil to 500mm deep	CM	72		
4.7.1	Back fill excavated areas with approved hardcore compacted in layers not exceeding 150mm thick to 100% maximum dry density. As base for the access road and parking	CM	72		
4.7.2	Supply, Deliver and spread 3/4 Ballast under and around the house (100mm Thick)	CM	14.4		
	TOTAL CARRIED TO GRAND SUMMARY				

GRAND SUMMARY FOR CIVIL WORKS TAKEN TO THE TOTAL BILL OF QUANTITIES AND PRICE SCHEDULE

SECTION	SECTION DETAILS	AMOUNT (Kshs.)
1	FENCE	
2	SECURITY GUARD HOUSE	
3	2 DOOR VIP LATRINE	
4	OFFICE, WATER SUPPLY AND ACCESS	
SUB TOTAL		
ADD 16% VAT		
SUBTOTAL		
ADD 5% CONTIGENCY **(to be used with the approval of the Project Manager)**		
TOTAL		

2. BILL OF QUANTITIES AND PRICE SCHEDULE FOR ONE 140 KW SOLAR MINI-GRID

Item	Description	Unit	Qty	Unit Price	Total Price
	CURRENCY:				
1.	Supply and installation of an array of solar modules that will generate enough power such that the power output at the connection point to the distribution board is not less than 140 kW on a bright sunny day at mid-day taking into account the system losses. The modules will be fixed on 60mm x 40mm (minimum) aluminium angle plates using stainless steel bolts of appropriate size and anchored firmly to the ground on concrete fixtures so that the modules are about 1.2 m above the ground for the low height side and a maximum of 1.5m above the ground for the high height side in case of a 2m length solar panel or any other height on the high height side as long the tilt angle is not more than 15^{o} from the horizontal. A layer of ballast aggregate of 16mm to be laid below the solar PV arrays. The angle of inclination and orientation of the modules to be determined by the site geographical coordinates for maximum optimization of the power output.	Set	1		
2.	Supply and install a 3-phase 40KVA power output diesel generator with 415 V at 50 Hz. It should include a highly corrosion resistant enclosure, control panel and monitoring, fuel tank and circuit breaker protection. The diesel generator shall be suitable for indoor or outdoor installation and shall perform accordingly with the battery inverter and the system design. The diesel generator shall work in a fully automatic manner with the above stated component. A concrete plinth to be constructed for the generator placement plus a shed of steel hollow sections and IT 4 sheets to engineer's approval to house the generator.	Set	1		
3.	Supply and installation of a 50 kW (minimum) Hybrid inverter and accessories. The inverter to be installed indoors or under the solar panels mounting with a small shed above and to have protection of at least IP54..	Set	3		
4.	Supply and installation of an intelligent controller/manager and accessories with the capabilities given in the specifications.	No	1		

Item	Description	Unit	Qty	Unit Price	Total Price
5.	Supply and installation of a battery bank (Lithium Iron Phosphate) of at least 421KWh Minimum capacity complete with charging system to supply at the point of connection to the bus bar of the distribution board at the power station during the evening peak period (7.00 pm to 10.0 pm). The design shall be such that the charging is from the solar array only but deliver the power to the inverter at the aforementioned time. Allowing for sufficient shelter as per engineers approval if recommended by the manufacturer – detailed designs to be presented with the tender document	Set	1		
6.	Supply and install a 500A TPN Manual change over switch complete with the metal .enclosure	No	1		
7.	Supply and install Energy Tariff Meter for measuring energy generated by the solar PV system	No	1		
8.	Design, Supply and install a structures to house all the equipment and tested having a protective painting of 2 coat RAL9001 epoxy and polyurethane, with two lockable doors, Air conditioning Unit, fire suppressing Unit with anti-panic door and other accessories and shall house the inverters, intelligent controller and battery bank and other associated equipment. The structure to be shielded from lighting by provision of a shed made of steel hollow sections and IT4 sheets with enough air circulation space between shed and structure. All this to be done to engineer's approval.	Set	1		
9	Cabling complete with all necessary accessories for connection of solar modules to battery bank, inverter, to intelligent controller/manager and to agreed connection point at the station through an energy meter and generator to the battery bank. This to also include cabling from the diesel generator for integration with power from the solar plant.	NO	1		
10	Supply and install Remote data monitoring	Set	1		
12	Transport all to the station, installation, testing and commissioning of all equipment under supervision of REREC	NO	1		
13.	12 Months maintenance plus training of maintenance staff.	NO	1		
14.	Factory inspection	NO	1		
	SUB-TOTAL				
	ADD 16% VAT (Only goods that attract VAT)				
	TOTAL COST FOR SOLAR PLANT				

3.BILL OF QUANTITIES AND PRICE SCHEDULE FOR SUBSTATION

Item	Description	Unit	Qty	Unit Price	Total Price
	CURRENCY:				
1	Control Room with Control Panels (Set with 1 Incomer and 1 Feeder). All these enclosed in standard 20 feet steel container with ready to use air- conditioned control room. This shall be inclusive of required concrete blocks on which the control container will be placed.	Set	1		
2	Energy Meter (Tariff type, 415V three phase meter) For Feeder	No.	1		
3	Cabling and Earthing for the substation. Control room will be placed approximately 5 metres from the Solar PV Control Room. The step-up transformer will be approximately 20 metres from the control room. The bidder will provide all control and power cables.	No.	1		
4	Step-up transformer 600 KVA, 0.415/11 KV Step-up TX, fitted with Buchholz relay, and pressure relief valve (See specs)	No.	1		
5	11 KV Circuit Breaker (Triple Pole) complete with Control and Protective panel and its accessories	No.	1		
6	Outdoor Neutral current transformer (NCT) (transformation ration 10/1A)	No.	1		
7	11Kv Outdoor Current Transformers (CT)	No.	3		
8	11Kv Outdoor Voltage Transformers (VT)	No.	3		
9	11kv Lighting Arrester (LA)/ Surge Diverters	No.	3		
10	11Kv Isolator without Earth Switch (DS)	Set	1		
11	11Kv Isolator with Earth Switch (DSE)	Set	1		
12	Mounting Structures for CT, VT, LA, DS and DSE	Set	1		
13	110VDC battery Bank supply	Set	1		
14	110VDC, 100AH Battery Charger	Set	1		
15	Transport all to the station, installation and commissioning of all equipment under supervision of REA/KPLC	Lot	1		

Item	Description	Unit	Qty	Unit Price	Total Price
16	Operation for 1 month inclusive of 1 month operator training.	Lot	1		
17	12 Months maintenance plus training of maintenance staff.	No.	1		
18	Factory acceptance test for the distribution board and outdoor Switchgear for 2 REREC/KPLC engineers.	Lot	1		
19	Factory acceptance test for the transformer for 2 REREC/KPLC engineers.	Lot	1		
20	Laptop computer fully loaded with the relays software initially stated in the specs.		1		
	SUB-TOTAL				
	ADD VAT				
	TOTAL COST				

ITEM NO.	DESCRIPTION	QUOTED AMOUNT
1	Civil works	
2	Solar Minigrid	
3	Substation(415V/11KV)	
Total(to be forwarded to form of tender)		

DADAJABULA TRADING CENTRE SOLAR MINI-GRID SPECIFICATIONS

PART I

Power Plant Specifications

1. General Description

Rural Electrification and Renewable Energy Corporation (REREC) invites sealed tenders for the design, supply, installation, testing and commissioning of 1No. 140kW solar PV-Diesel hybrid plant in Dadajabula Trading Centre Wajir County.

2. Project Location

The off-grid solar Photovoltaic (PV)Power Plant is to be supplied and set to work under this contract is to have an output of not less than 140 kW at the point of the Inverter Output. The plants shall be installed in DadaJabula trading center in off-grid county of Wajir.

Annex 1.

The document has tender for design, supply, testing and commissioning of a 1no. 140 kW solar PV-Diesel hybrid generation plants complete with their solar modules, Hybrid inverters with a capacity not less than 140 kW, Lithium ion Phosphate batteries for back-up with a capacity not less than 421KWh, intelligent controller/manager, mounting support, electrical controls, protection and instrumentation, a diesel generator backup of not less than 40KVA and Step up substation (0.415/11KV) complete with all associated accessories and civil works.

3. System Description

During the daytime, the Solar Power Generation Plant should supply power directly to the Loads in online mode, along with charging of the batteries in continuous mode. On most non-cloudy days during the year ("regular day"), batteries should get fully charged during the day time. In evening or morning (Sun period) battery should support the Solar Power Generation Plant to meet the load, if required

The solar PV hybrid power plant shall consist of the following main components:

- Solar PV modules
- Solar PV modules structures
- Hybrid inverters
- lithium ion batteries
- Diesel thermal generator for reserve power
- Switchgear
- Step up substation (0.415/11 KV)
- Outdoor sub-station equipment

The tenders are for design, supply and commissioning of a new solar PV hybrid generation plant complete with its solar modules, inverter, lithium ion phosphate batteries with battery rack, diesel thermal generator with automatic startup function, mounting structure of modules, electrical controls, protection and instrumentation and Step-up substation (0.415/11KV) complete with all associated accessories and civil works. The plant shall be installed at the DadaJabula trading center, Wajir county, Wajir South Constituency.

The solar PV power plant is also equipped with a Diesel Generator, which shall be used normally as

reserve power. The diesel generator should switch on automatically whenever the state of charge of the battery reaches a set depth of discharge. This will be defined at commissioning stage. The diesel generator shall be sized to charge the lithium ion batteries so that the power plant is operating at its optimum power rate. The diesel generator shall comprise a 40kVA unit in three-phase operation. The diesel generator has to be equipped with automatic startup function controlled by the battery inverter or a robust energy management system (EMS). The priority has to be given to use the solar energy and the diesel generator will meet the energy deficit. In case of a power outage of the inverter, the critical loads have to be bypassed to the diesel generator by manual switch over.

The battery bank shall be charged by solar power during the day and its capacity shall be determined with C_{10} capacity rate.

3.1 Description of Electrical Components and Requirements

3.1.1 PV Generator

The Photovoltaic Generator shall consist of Silicon monocrystalline (Mono PERC) Photovoltaic modules of capacity at STC of 400Wp or above. The PV modules have to comply with the standard norms IEC 61215 and IEC 61730. An aluminum frame is applied around each module to protect the module from any damage during transport, installation and operation.

The junction box behind the module with their positive and negative terminals has to be equipped with bypass diodes and with at least IP 68 protection and UV resistant.

The DC cable used with the PV generator must be able to withstand thermal and mechanical loads. The insulation and jacket material has to be extremely resistant to weathering, UV-radiation, and abrasion. Further, the cables must resist temperature up to 60°C. In general, the wiring on the DC side is required to be double insulated and with UV stable cables. It is recommended to use cable that is flexible suitable for fixed installation as well as for thermal movement of modules.

3.1.2 Hybrid Inverter intergrated with MPPT Charge Controller, DC-Coupling Technology

The inverter converts direct current (DC) from the solar generator into alternating current (AC) and supplied to AC Loads and the surplus is used to charge the batteries. The installation can be indoors or outdoors depending on the equipment manufacturer recommendation. The device has to be protected from harsh conditions with high ambient temperatures and dust. The inverter has to comply with the international norm IEC 61727 and has to be all electrical protections on DC and AC side.

The main function of a charge controller is to protect the battery by regulating the energy generation and consumption. This is done by limiting the voltage of the battery at charge and discharge mode. Main features of charge controllers are to avoid over-charging, disconnection of load due to low voltage or SOC, and display charging and discharging current, battery voltage and State of Charge (SOC). Charge controllers must be sized to the battery voltage, the maximum output current of the PV. It is advised to use MPPT charge controller for higher efficiency and to avoid mismatching of solar modules.

The charge controller has to comply with safety of power converters for use in photovoltaic power systems. Part 1: General requirements IEC 62109-1.

3.1.4 Battery Energy Storage System (BESS)

The battery storage shall be Lithium Iron Phosphate (LFP) type and shall be installed in a well-insulated and air-conditioned room or container.

- Batteries are charged by MPPT controller / Charger. Thus, batteries charging mechanism should be part of the BESS.
- The BESS must allow minimum 90% of Depth of Discharge
- Warranted number of cycles for the BESS for lithium Ion battery systems at the supplier recommended

depth of discharge should not be less than 5,000 cycles at 80% DOD.

- Guaranteed minimum service life of Lithium Ion BESS shall be 10 years with replacement warranty of 10 years. If due to any reason battery is required to be replaced, then the Contractor is to replace the same in warrantee period without any extra cost to the Employer.
- Load demand requirement of each site, design concept of BESS, Inverter rating and Battery rating, Contractor should submit the detailed drawing for approval demonstrating the meeting of load requirements.
- There shall be no environmental hazards caused due to:
    i) Improper use and maintenance of the battery bank.
    ii) Improper disposal of batteries at the time of replacement.
    iii) Any manufacturing defects.
- All technical and other details pertaining to the storage cells shall be supplied including but not limited to the following:
    i) Rated voltage and ampere-hour capacity of each storage cell as the rated discharge rate,
    ii) Permitted maximum DOD,
    iii) Self-discharge rate,
    iv) Cycle life of the storage cell and the anticipated life (in years) of the battery bank.
    v) Total number of storage cells in use.
    vi) Details on cell interconnections, if any
    vii) Charging system used for battery
- The system should allow for the load current to be supplied at the same time as the battery charging current, whether AC- or DC- coupled.
- The contractor shall submit (in 4 sets) complete design and expected performance of BESS calculations, drawings, reports and data for approval of the Employer during detailed engineering.
- The design of BESS with critical parameters such as response time discharge duration, Depth of discharge, frequency of discharge, cycle life, round trip cycle efficiency performance degradation, self-discharge characteristics, short time discharge rating, transient response characteristics, auxiliary system requirement etc. shall be included in the detailed engineering.
- Battery systems should have fire protection system (FPS) and shall be designed for BESS in line with NFPA or international norms regulation as applicable.
- For battery systems conforming to International Safety and Electrical Standards shall be Complete in all respect consisting of:
    i) Battery inverter/charger for supply voltage, multi-mode (DC to AC and AC to DC), wave type sinusoidal.
    ii) Complete with programmable control and regulation parameters, protection system, control system, surge protection system etc.
    iii) Site Master Controller or Minigrid Controller System.
    iv) Requisite numbers of battery pack, the combination of which shall equal or exceed the estimated capacity shown in design characteristics in this document, with Min. 80 % DOD,
    v) Enclosures conforming to IP35 for Indoor /IP65 or better for outdoor.
    vi) All accessories and connection for correct installation and operation of BESS.
    vii) All cables for inter connection with main AC distribution board.
    viii) Support structure to keep battery at minimum height of 1 Meter from ground to take care water flooding etc.
    ix) Test certificate and test reports as per IEC62133, IEC61959 and IEC 61960 or other international equivalent standard applicable to battery technology shall be submitted for approval of the Employer. All other test certificate and test reports as per international standards and norms for large scale BESS shall be submitted for approval of the Employer during submission of detailed engineering.

3.1.6 Diesel Generator

The Diesel Generator shall have a 3-phase 40KVA power output with 415 V at 50 Hz. It should include a highly corrosion resistant enclosure, control panel and monitoring, fuel tank and circuit breaker protection. The diesel generator shall be suitable for outdoor installation and perform accordingly with the battery inverter and the system design. The diesel generator shall work in a fully automated manner with the above stated component. A concrete plinth to be constructed for the generator placement plus a shed of steel hollow sections and IT 4 sheets to engineer's approval to house the generator

3.1.7 Data Monitoring

In order to achieve a high performance of the solar PV hybrid power plant, the incorporation of automatic data acquisition and monitoring technology is essential. This allows that the yield of the PV plant can be monitored easily and compared with calculations made from solar irradiation data to raise warnings on a daily basis in case of a shortfall. Important information on for example State of Charge of the battery storage and other relevant energy and power value from the system including time stamps of diesel generator operation can be detected and rectified before they have an appreciable effect on system performance. A data monitoring system shall be installed to meet the requirements above and has to give the opportunity to receive the system data via GSM and to allow remote access to the solar PV hybrid power plant. The electrical power supply of the data monitoring system shall be from DC power of the battery. Corresponding electrical adaption of the monitoring to the DC power supply level shall be installed. Remote monitoring and data acquisition through Remote Monitoring System Software at the REREC location with latest software/hardware configuration and service connectivity for online / real time data monitoring complete to be supplied by the supplier. Provision for interfacing these data on REREC server and portal in future shall be kept. Reliable sensors for solar radiation, temperature & other electrical parameters are to be supplied with the data logger unit. Communication interface the entire system can be operated and monitored via various interface viz (RS232, RS485, MPI, Profit-bus, Telephone modem), in addition to the information indicated on the operator panel. Remote Monitoring may be achieved directly via inverter interface or via third party data acquisition system. Remote monitoring system should allow for rudimentary parameter adjustment.

3.1.8 Lightning & Over Voltage Protection

- The Solar plant shall be provided with lightning and over voltage protection connected to proper earth pits. Earthing pits shall be measured to have an earthing resistance of 1Ω or less at the time of installation. If this level cannot be obtained with the soil at the facility, then soil conditioning (engineered backfill) shall be implemented to improve the earthing resistance within acceptable levels.
- The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components per NFC 17-102. The source of over voltage can be lightning or other atmospheric disturbance.
- Lightning mast/conductor, placed at strategic locations, shall be used to protect the arrays against lightning protection. The bidder shall give detailed design showing location of lightning conductor/masts and the protection coverage on array without causing any shadow on the modules to the Employer.
- All design shall be submitted to the Employer before its implementation.
- Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to maximum wind speed and maintenance requirement at site in future.
- The lightning conductor shall be earthed through GI flats and connected to with earth pits per applicable International Standards. Three earth pits shall be provided for each lightning arrestor. Each lightning conductor shall be fitted with individual earth pit as per required Standards including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS.
- Design calculations, technical specification and requisite test reports of lightning mast conforming to international standards along with detailed write up in 4 sets shall be provided for approval to the Employer.

3.1.9 Earthing Protection

- Earthing system shall be in strict accordance with IEC specified and applicable Electricity Rules / Acts and Guidelines for connections.
- Earthing system network / earth mat shall be of interconnected mesh of GI flats buried in ground in the plant. The interconnections shall be done with GI flats of suitable sizes. The earth conductors shall be free from pitting, laminations, rust, scale and other electrical, mechanical defects.
- Metallic frame of all electrical equipment shall be earthed by two/three separate (as per KPLC norms) and distinct connections to earthing system, each of 100% capacity, with the exception of solar panels, for which alternate means of code-compliant earthing shall be admissible if integrated with racking design.
- Metallic sheaths / screens, and armor of multi-core cables shall be earthed at both ends. Metallic sheaths and armor of single core cables shall be earthed at switchgear end only unless otherwise approved.
- Each continuous laid lengths of cable tray shall be earthed at minimum two places by G.S. flats to earthing system, the distance between earthing points shall not exceed 30 meter/ KPLC norms. Wherever earth mat is not available, necessary connections shall be done by driving an earth electrode in the ground.
- Neutral connections and metallic conduits/pipes shall not be used for the equipment earthing.
- Lightning protection system down conductors shall be terminated to separate earth electrodes & not be connected to other earthing conductors.
- Connections between earth leads and equipment shall normally be of bolted type. Contact surfaces shall be thoroughly cleaned before connections. Equipment bolted connections after being tested and checked shall be painted with anti-corrosive paint / compound.
- Back filling material to be placed over buried conductors shall be free from stones and harmful mixtures. Back filling shall be placed in layers of 150 mm.
- Earth pit shall be constructed as per IEC standard specified, Minimum spacing between electrodes shall be 2000 mm. Earth pits shall be treated with salt and charcoal/chemical Powder Earthing.
- Earth resistance at earth terminations shall be measured and recorded. All equipment required for testing shall be furnished by successful bidder.
- Each array structure of the SPGP yard/shed shall be grounded properly as per standard.
- The Array Structure is to be connected to earth pits as per standards. Junction boxes shall be connected to the main earthling conductor/electrode.
- The arrays shall be in protected zone of lightning arrester/spheres by installation of suitable lightning surge diverters/arrestors. The earth electrodes for the same shall have to be completely separate from the plant/array earthing.
- All metal casing/shielding of the plant shall be thoroughly grounded in accordance with applicable electricity act/rules/guidelines. Total earthing system installation shall be in strict accordance with the latest editions of Electricity Rules, relevant Standards and code of practices and the local statutory authority regulations.
- Necessary test point provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.
- All non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.
    - Earthing Design And Layout
        i) The successful bidder shall submit Design along with drawings showing the location of lightning arresters and protection zones to cover all arrays against lightning for approval from Employer.
        ii) The earth mesh system design consisting of G.I Flat shall be submitted for approval of Employer.
        iii) Total plant earthing system shall be designed to give an earth resistance of less than 1 ohm all along the earth mesh.
        iv) Earthing conductors in outdoor areas shall be buried 1.5 to 2M below finished graded level and these buried conductors shall be brought 500 mm above ground level for making tap connections to the equipment.
        v) All the electrodes shall be 50 mm diameter GI pipe, 3.0 m long and shall strictly be as per IS: 3043/IEC of latest revision.
- Each phase of lightning arrestor shall be earthed through GI flat (considering salty weather) connected to an individual earth electrode.

- If present, air break switches and DO fuses shall also be earthed GI flat to the main earthing flat.
- Metallic conduits and pipes shall not be used as earth continuity conductor.
- GI conductors shall be provided for earthing the lighting fixtures, receptacles, junction boxes, lighting conduits and this conductor in turn shall be connected to the main earthing conductor / electrode.

4. Equipment Housing

4.1.1 Power House

The Multi-Mode Inverter(hybrid), data monitoring equipment, and all monitoring equipment shall be installed indoors with equipped Air conditioner and fire suppressing Unit according to the equipment manufacturer's recommendations. All electrical boards and LV protections will also be installed indoors. The battery storage shall be installed indoors in a separate room equipped also with Air Conditioner and fire suppressing unit according to the equipment manufacturer's recommendations. All recommendation and regulations for installing the selected batteries in has to be taken into account. The Diesel Generator shall be installed outdoors.
The BESS unit (Hybrid inverter, Batteries & accessories) may also be housed in a well designed cabinet or container with controlled environmental condition e.g. temperature, humidity etc.

The Power House shall also be equipped with safety and protective elements required for operations, maintenance and emergencies. This will include fire extinguisher, water source, protective goggles and clothing, etc.

- Air Conditioner is a must for all rooms / compartments in the Power House.
- "Double Layer Roof" to reduce heating room from direct sunlight.
- Outer roof layer must be big enough to avoid direct sunlight heating technical rooms / compartments, over the course of the year.

- Insulated walls to reduce outside heat energy flow

4.1.2 Housing Solution

The inverters and all monitoring equipment shall be installed with Air conditioner according to the equipment manufacturer's recommendations in a standard structure and the tenderer to submit with the bid document detailed design of the structure which will house all the equipment and present for approval. The structure has to be delivered and placed on reinforced concrete blocks by the tenderer. The Structure shall be further placed under an open shed made of steel hollow sections and IT4 sheet roof so that direct sunshine does not fall on structure and there is adequate space between the shed and Structure to allow air circulation. The place has to be appropriate and protected from lightning. Location has to be chosen that no heavy rain or seasonal flooding can enter the structure. Foundation above ground has to be minimum 2 steps, each 14 cm.

Thermal insulation inside the structure is advised. Proper wall mounting support for Inverter and AC distributions is advised. Pre-installed Inverter and other equipment is not recommendable. Preinstalled equipment will lead to loss of manufacturer warranty as damage may occur due to transport (shaking). Pre-installed battery is not possible due to safety regulations.

The inverters installed under the solar panels mounting with a small shed above to reduce risk of rain/water on the inverter but with adequate room for air circulation to reduce temperature build-up. The inverters shall have protection of at least IP54

4.2 Electrical Installation

In the case of a power outage of the core component the inverter, the critical loads have to be bypassed to the diesel generator and manually switched. Corresponding electrical installation equipment has to be installed. An additional AC power output switch to disconnect the village from the powerhouse or container solution shall be installed outside of the housing. The functionality is for maintaining the AC distribution grid in the trading center separate from the electrical equipment in the housing to avoid non-authorized persons accessing the power room.

4.2.1 Electrical Protection

The solar PV hybrid system shall contain all necessary electrical protection to ensure the safety of persons and goods. At the LV distribution boards, thermomagnetic circuit breakers with C trip curve shall be included meeting IEC 60947-2 requirements. It shall also be included differential residual current circuit breaker for the person protection (RCD).

It is also important to implement a lighting protection system, ensuring the coverage of the whole PV plant, Power House, Container and Diesel Generator. Installation & Commissioning by approved / certified / licensed company.

4.2.2 Transmission and Distribution Line

The electricity distribution from the generation plant to the end consumers will be done by means of a distribution line formed by a Medium voltages (MV) line at 3-phase 11 KV/ 50 Hz. This will be done in a separate scope from this tender.

The power from the solar plant shall be connected to the electrical system of REREC through a 500 amps' breaker and isolator of the same capacity to be provided by the tenderer. The tenderer shall also provide and install an energy tariff meter complete with current transformers (CTs) for measuring energy generated by the solar PV hybrid power plant.

4.3 Balance of System

The Balance of System (BOS) encompasses all components of a solar PV hybrid power plant that includes wiring, switches, a mounting system, one or many battery bank. and charge controller. BOS refers to all components of a PV system other than the modules. In addition to inverters and racking, this includes the cables/wires, switches, enclosures, fuses, ground fault detectors, and more.

4.4 Module Mounting Structure

The solar power plant including the solar modules shall be installed in the parcel land/space provided by REREC. The modules shall be fixed about 1.2 m above the ground for the low height side and maximum of 1.5m above the ground for the high height side in case of a 2m length solar panel or any other height on the high height side as long the tilt angle is not more than 15^{o} from the horizontal. They should rest on aluminum frames or standard hot dipped galvanized steel of not less than 60mm x 40mm using stainless steel bolts. The frames shall rest on aluminum fixtures or racks that are firmly anchored to the ground with a layer of ballast aggregate of 16mm size laid on the ground 50mm thick below the solar PV arrays. The number of rows in each solar PV array shall be no more than three (3). Setting of the angle of inclination and orientation of the modules shall be computed and done on site by the tenderer so as to give maximum power radiation at midday. The modules must be of proven design and the tenderer must indicate countries where they are manufactured, countries where they have been used and for how long.

The module-mounting frame has to be earth grounded. The modules shall have a tilt angle of not more than 15° from the horizontal.

4.5 General Rating

The solar PV hybrid power plant has to be capable of producing the maximum output under the continuous ambient temperatures, altitude and relative humidity given below:

Temperature: Max. 45 degrees Celsius
Min. 18 degrees Celsius
Average 32 degrees Celsius

Relative humidity: 90 – 100 %

4.6 Cables & Wiring

All instruments and panel wiring shall be of heat resisting and self-extinguishing type in compliance with IS. Plastic or porcelain cleats of the limited compression type shall be used for holding wiring runs. All wires shall be suitable for bending to meet the terminal studs at right angles. Metal cases of all apparatus mounted on panels shall be separately earthed by means of copper wire or strips.

The following color scheme of the wiring shall be used as per standard for three phase systems.

a) AC three phase circuits:
   i) No.1 Phase : Red.
      No.2 Phase : Yellow.
      No.3 Phase : Blue
   ii) Neutral conductor : Black
   iii) Connection to earth : Green
b) D.C. circuits : Grey

4.7 Cables and Accessories

Cables of appropriate size to be used in the system shall have the following characteristics:

i) Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
ii) Temp. Range: -10^0C to $+80^0$C
iii) Excellent resistance to heat, cold, water, oil, abrasion, UV radiation.
iv) Flexible.
v) Sizes of cables between array interconnections, array to junction boxes, junction boxes to inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.

All the cables shall conform to the requirements of the related standards and codes for:

i) DC cable for photovoltaic system
ii) XLPE / PVC insulated (heavy duty) electric cables for working voltages up to and including 1100V.
iii) Recommended current ratings

iv) Low carbon galvanized steel wires, formed wires and tapes for armoring of cables

v) VC insulation and sheath

vi) Cross linked polyethylene insulated PVC sheathed cables

vii) Conductors for insulated electrical cables and flexible cords.

viii) Standard test method for density of smoke from the burning or decomposition of plastics.

ix) Tests on gases evolved during combustion of electric cables.

x) Tests on electric cables under fire conditions.

5. Main Technical Specification of Solar PV Hybrid Power Plant

Table 1 summarizes the required main technical specification of the solar PV hybrid power plant.

Pos 1	General Specification	
1.1	Name of project site	DadajabulaTown solar mini grid
1.2	Coordinates	
1.3	Site altitude	
1.4	Daily load demand	500 kWh/day
1.5	Annual yearly demand rising for the next 5 years	3 %
1.6	Renewable Energy fraction	90 %
Pos 2	Solar PV Generator	
2.1	Solar PV Generator Capacity (Minimum)	140 kWp
2.2	Module type	Silicon monocrystalline (Mono PERC)
2.3	Module nominal power	>400 W
2.4	Inverter type	Hybrid inverter
Pos 3	Battery Storage	
3.1	Battery type	Lithium-Ion type
3.2	Battery String Voltage	=> 500 V DC
3.3	Battery Usable Capacity	421KWh
3.4	Battery cycles	5000 at 80% DOD @ 25°C
Pos 4	Diesel Generator	
4.1	Fuel type	Diesel
4.2	Generator type	Synchronous generator
4.3	Generator power output	3-phase
4.4	Number of generators	1
4.5	Rated power	40 kVA
4.6	Start behavior	Automatic-startup
Pos 5	AC distribution line (To be done by REREC)	
5.1	Distribution type	Medium voltage 11KV/50 Hz
5.2	Number of LV transformer	None
Pos 6	Data Monitoring system	
6.1	Energy and power values from solar PV power plant	1No.
6.2	Data from battery management	1No.
6.3	Digital energy tariff meter for the Trading Centre Out Put	2No.
6.4	Control Panel for Energy and power values from Diesel Generator)	1No.
6.5	GPRS/ GSM Modem for remote assess	1No.

6.6	Meteorological sensors (solar radiation, ambient temperature, wind speed)	1No.

Table 1: Required technical specification of the solar PV hybrid power plant

6. Documentation

All work steps will be documented in detail throughout the construction phase. The documentation will include as build plans, datasheets, technical specifications, and installation and operation manuals for each component of the installed system.

6.1 Operation & Maintenance Manuals

One (1) original and two (2) copy sets (hard and soft copies) of comprehensive operating and maintenance manuals bound in hard covers shall be supplied prior to handing over the plant to the employer. The manuals shall detail out the operating regimes and critical settings and tolerance to be maintained during inspection of the plant. The O & M manuals will be provided after completion of the installation.

6.2 Drawings

The tenderer shall submit together with the tender document drawings and parts identification lists for every item of the plant together with a full list of all sub-contractor's addresses fax numbers, emails, etc. The drawings shall contain exploded views/diagrams of the main assemblies comprising the plant together with a means of identifying each component including its part number, reference and description as per the manufacturer's coding system. The contractor's coding system shall not be acceptable.

The tenderer shall submit with original and two copies of his tender general arrangement drawings and typical details of the essential items of the plant offered which will be used in during the erection period.

All drawings shall be submitted folded to A4 size with the drawings box visible on the outside. After commissioning the plant, two sets of as built drawings will be handed over to the Employer, which shall include but not limited to:

General arrangement drawings, assembly drawings, pipe work layouts, terminal point details, foundation and erection drawings.
Single line logic diagrams for all control systems and main electrical systems
Wiring and pipe work diagrams, interconnection diagrams and schematic diagrams for equipment modules and systems.

After award of the tender, discussions will be held with the employer on the drawings submitted with the tender that will lead to final approval of the drawings by the employer. Before the final approval, the drawings shall be modified as necessary if requested by the employer.

The taking over certificate will not be issued until the built drawings, O&M manuals and catalogues have been submitted and accepted by the employer.

Site Preparation

The tenderer or the local contractor has to prepare the site. The services will include all deliverables as mentioned below.

The site preparation will include:

Trenching for underground cables, preparation of ways and pipes for wiring are not part of site preparation. The installation contractor has to prepare and use a container as power-house in respect with the individual components manufacturer installation notices if container solution is required

The tenderer will execute the following work in regards to the site set-up:
Clearing of scrubs and leveling of grounds
Erection of brick buildings to host the batteries, inverters and Generator if required □
The preparation of an adequate space where the container shall be placed if required

Installation of a steel mounting structure on which the panels will be mounted.
Storm water drainage works as may be necessary based on the topography of site provided
The installation company is to note that the steel mounting structure will be prepared according to the dimensions of the quoted solar panels. The steel structure will be including the aluminum frames, which are to be supplied by contractor.

Installation Phase

The installation phase will include the following steps depending on the solar PV hybrid power plant design and specification:
Mounting of modules on pre-installed mounting structures
Installation of Hybrid inverters and cabling with the AC distribution
Installation of DC converters and cabling with the DC distribution
Installation of battery bank and cabling with the system
Installation of the Generator and cabling with the system
Cabling of solar array, array to grid powerhouse or container
Installation of auxiliaries and remote monitoring devices
Labeling of the completed system
System DC and AC wiring
Installation of 0.415/11KV substation and associated protection systems
Further necessary installation work

Commissioning Test

Complete commissioning of the power plant, function tests, and trial service of the power plant. All installations and equipment will be inspected and their functionality will be tested. All components, electrical works and civil works will be visually checked for compliance with the technical specification, Guidelines/Manuals of delivered equipment, build plans, state of the art engineering works.

Commissioning tests will be carried out to demonstrate that the solar PV hybrid power plant is operated according to the technical specifications and under all available operating conditions. The contractor will sign a final acceptance certificate.

The tenderer shall submit with the bid document a schedule of commissioning test to be contacted during testing and commissioning and the expected output values where applicable

Operator Training

The technical commissioning of the solar plant will include training on the operation of the power plant components. The training will include the maintenance of the batteries, the remote monitoring and operation of the Generator both on manual and automatic mode. It will be verified that the operating personnel are adequately trained.

Information for Installer Companies

The contractor is obliged to adhere to the Energy (Solar Photovoltaic Systems) Regulations from 2012, which state “A person shall not import, distribute, promote, sell or install any solar PV system unless he is licensed by the Commission as a vendor.

System Layout

The solar PV hybrid power plant shall consist of following main equipment’s/components following the design specifications of the contractor.
Solar module array
Mounting structure and civil foundation
Hybrid inverters
Battery bank
Battery mounting rack
Diesel generator and diesel tank
0.415/11KV substation

DC and AC-Cabling
Control panel with switcher, disconnectors and safety elements
Sub-station outdoor equipment – CTs, VTs, Isolators
Earthing and lightening protections.
Data monitoring system
Housing of equipment

12.1 Schematic Diagram

The design of the solar PV hybrid power plant has to follow DC coupled architecture operation. The system has to be modular expandable for future development. The installer has to provide the schematic drawings for approval by the employer before installation.

13. Notice Board

A notice board 1.5m by 1m made of a continuous sheet metal with steel angle line supports 2" by 2" by 3mm and 1.5m high shall be erected at the gate of the beneficiary institutions and shall read as thus:

THIS SOLAR PV HYBRID SYSTEM
AT
(*FULL NAME OF THE TRADING CENTRE*)

HAS BEEN IMPLEMENTED BY THE NATIONAL GOVERNMENT THROUGH

THE RURAL ELECTRIFICATION AND RENEWABLE ENERGY COPORATION

This writing should cover over 80% space of the notice board (65mm Text Height).
Any other writings should **strictly** not be included.

Part II

14. Detailed Technical Specification and Requirements

The proposed project under this tender for setting the solar PV hybrid power plant shall broadly follow technical specifications given below.
These specifications describe the requirements for the equipment. Tenderers are requested to submit with their offers the detailed specifications, drawings and catalogues, for the products they intend to supply. **The details in the provided catalogues SHALL be used in the tender evaluation for specification compliance.**
Tenderers must indicate on the specifications sheets whether the equipment offered comply with each specified requirement **and where that information can be found in the catalogues.**
All the dimensions and capacities of the equipment to be supplied **SHALL** not be less than those required in these specifications.
The Tenderer shall indicate in the technical specification of each component brand name, model and country of origin. Comparative specification should indicate any derivations from technical parameter, design, or functional description of tender specification. If there is no derivation to the left side, please state, "YES".

14.1 Documentation and Instructions (Required during installation and commissioning)

ITEM	PRODUCTS DOCUMENTATION AND SPECIFICATION	BIDDERS RESPONSE
	The following documents will be required during installation and commissioning	
	For each product offered the following documentation has to be included:	
1	Product description and data sheets, manufacture description, and operation manual	
2	Installation instructions	
3	Connection plans, single line diagram	

4	Commissioning instructions, manual for start and stop operation, commissioning protocol	
5	Operating instructions, do´s and don´ts	
6	Maintenance instructions, maintenance interval, maintenance effort, necessary staff	
7	Error sources, error diagnosis and troubleshooting instructions	

14.2 Solar Photovoltaic Modules

No.	**SPECIFICATION OF PV MODULES**		**BIDDERS RESPONSE**
1	Name of Manufacturer, Brand Name, Model,		
2	Min power rating	400W	
3	Cell type	Monocrystaline	
4	Product coding	State	
5	Front Glass Coating	Min 3.2mm Anti-reflection coating,	
6	Front Glass Material	High transmission, low iron, tempered glass	
7	Frame	Anodized aluminumm alloy	
8	Weather resistant Junction box with 3 Bypass-diodes on the backside of the modules with protection class min. IP 54		
9	Wiring of the modules with pin-and-socket connector according to EN 50521		
10	Busbar solar cell	Mini 5	
11	Quantity of cells	State	
12	Temperature coefficient PMPP:	<=-0.41%/C	
13	Temperature coefficient Voc:	<=-0.32%/C	
14	Temperature coefficient Isc:	<=0.06%/C	
15	Operating temperature range:	-15°C < =T< =45 °C	
16	Module efficiency	at STC-conditions > 20%	
17	Current at maximum power point (A) (maximum)	Min 8.3A	
18	Voltage at maximum Power Point (V) (minimum) - STC	Min 35V	
19	Open Circuit current (Isc) - STC	Min 9.0A	
20	Short circuit Current		
21	Positive power sorting		
22	10 years product warranty		
23	25 years linear performance guarantee (90% up to 10 years and 80% up to 25 years)		
24	CE- conformity, DVE GS, TUV quality certified for product		
25	Horizontal and vertical assembly possible		

No.	SPECIFICATION OF PV MODULES		BIDDERS RESPONSE
26	High Mechanical load (acc. IEC 61215 (5400Pa superimposed load and 2400Pa suction load))		
27	Pre-cabled with MC4 Plug –connectors (IP 65)		
28	Nominal power at IEC-Conditions (radiation 1000W/m2, Air-Mass 1.5 25°C)		
29	Product certification	IEC 61215 (Ed.2)	
30	Protection class	II/ IEC 61730	
31	Salt mist corrosion test	IEC 61701 (Ed. 2)	
32	Documentation: English	Please indicate:	
33	positive Power Tolerance	0 to +3%	
34	Cell dimension (length x width) in mm		
35	Module dimension (length x width x height) in mm		
36	Module weight in kg		
37	Wind Load withstand	Min 2350 pascal	
38	Load pressure withstand	5,000 Pascal	

14.3 Hybrid Inverter

ITEM	DESCRIPTION	REREC MINIMUM SPECIFICATION	BIDDER RESPONSE
Battery Input Data			
1	Battery type	Li-ion	
2	Nominal battery voltage (V)	620	
3	Battery voltage range (V)	450-865	
4	Start-up voltage (V)	500	
5	No. of Battery Input	1	
6	Max. Continuous Total Charging / Discharging Current (A)	100	
7	Max Charge / Discharge Power (W)	50000	
PV String Input Data (or DC-DC Converter)			
8	Max. Input Power (W)	65000	
9	Max. Input Voltage (V)	1000	
10	MPPT Operating Voltage Range (V)	450-850	
11	MPPT Voltage Range at Nominal Power (V) 5	500-850	
12	Start-up Voltage (V)	180	
13	Nominal Input Voltage (V)	600	
14	Max. Input Current per MPPT (A)	120	
15	Max. Short Circuit Current per MPPT (A)	125	
16	Max. Back-feed Current to the Array (A)	0	
17	Number of MPPTs	1	
18	Number of Strings per MPPT (based on current limit)	8	
AC Output Data (On-grid)			
19	Nominal Apparent Power Output to Utility Grid (VA)	50000	

ITEM	DESCRIPTION	REREC MINIMUM SPECIFICATION	BIDDER RESPONSE
20	Output Rated Active Power (W)	50000	
21	Max. Apparent Power Output to Utility Grid (VA)	52500	
22	Nominal Apparent Power from Grid (VA)	50000	
23	Max. Apparent Power from Utility Grid (VA)	55000	
24	Nominal Output Voltage (V)	400, 3L / N / PE	
25	Output Voltage Range (V)	312~460 (AS) / 318~497	
26	Nominal AC Grid Frequency (Hz)	50 / 60	
27	AC Grid Frequency Range (Hz)	47~52 (AS) / 47.5~51.5	
28	Max. AC Current Output to Utility Grid (A)	76	
29	Max. AC Current from Utility Grid (A)	100	
30	Max. Output Fault Current (Peak & Duration) (A)	156A@150us	
31	Inrush Current (Peak & Duration) (A)	160	
32	Nominal Output Current (A)	72.5	
33	Output Power Factor	-1 (Adjustable from 0.8 leading to 0.8 lagging)	
34	Max. Total Harmonic Distortion	<3%	
AC Output Data (Back-up)			
35	Back-up Nominal Apparent Power (VA)	50000	
36	Output Rated Active Power (W)	50000	
37	Peak / Max. Output Apparent Power (VA)	55000	
38	Max. Output Current (A)	76	
39	Nominal Output Voltage (V)	400Vac, 3L / N / PE	
40	Nominal Output Frequency (Hz)	50/60	
41	Output THDv (@Linear Load)	<3%	
Efficiency			
42	Max. Efficiency	97.60%	
43	European Efficiency	97.30%	
44	Max. Battery to Load Efficiency	97.20%	
Protection			
45	DC Insulation Resistance Detection	Integrated	
46	Residual Current Monitoring Unit	Integrated	
47	Anti-islanding Protection	Integrated	
48	DC Reverse Polarity Protection	Integrated	
49	AC Overcurrent / Overvoltage Protection	Integrated	
50	AC Short Circuit Protection	Integrated	
51	DC / AC Surge Arrester	Type II (Type I Optional)	
52	DC / AC Switch	Integrated	
53	PV String Current Monitoring	Optional	
54	DC Arc Fault Circuit Interrupter	Optional	
55	Emergency Power Off	Integrated	
56	Rapid Shutdown	Optional	
57	Remote Shutdown	Integrated	

ITEM	DESCRIPTION	REREC MINIMUM SPECIFICATION	BIDDER RESPONSE
58	PID Recovery	Optional	
59	I-V Curve Scan & Diagnosis	Optional	
General Data			
60	Operating Temperature Range (°C)	-20~+60°C (>45°C derating)	
61	Relative Humidity	0~95% (Non-condensing)	
62	Max. Operating Altitude (m)	4000	
63	Cooling Method	Fan Cooling	
64	User Interface	LCD & LED & APP	
65	Communication with BMS	RS485	
66	Communication with Meter	RS485	
67	Communication with Portal	RS485, LAN / Bluetooth	
68	Weight (Kg)	142	
69	Dimension W × H × D -in (mm)	585 × 1360 × 750	
70	Noise Emission (dB)	<68	
71	Topology	Transformerless	
72	Ingress Protection Rating	IP20	
73	DC / AC Connector	NC	
74	Protective Class	I	
75	Environmental Category	4K4H	
76	Storage Environment (°C)	-30~+60°C	
77	Pollution Degree	II	
78	Overvoltage Category	DC II / AC III	
79	The Decisive Voltage Class (DVC)	C	
80	Mounting Method	Tower	

14.4 Battery Storage

ITEM	SPECIFICATION FOR THE BATTERY STORAGE		BIDDERS RESPONSE
1	Type of battery	Lithium ion Phosphate	
2	Name of manufacturer, Brand name,	Model, Type	
3	Type of technology		
4	State of charge	Pre-charged	
5	DC-Voltage	V/cell	
6	DC-Voltage battery bank	V	
7	Qty of cells		
8	String configuration		
9	Number of Strings		
10	Rated energy capacity/string		
11	Capacity	capacity rate	
12	Rated Voltage		
13	Designed according	DIN 40736	
14	Certification	UN 38.3, IEC 62619	
15	Self-discharge per month at 20° degrees	< 3%	

ITEM	SPECIFICATION FOR THE BATTERY STORAGE		BIDDERS RESPONSE
16	Cycles at 80% DoD(according to IEC 896-1)	> 4000	
17	Max. DOD in operation	> 80 %	
18	At least 20 years without losing capacity	more than 20% of the rated capacity	
19	Battery management system (BMS)	Cell balancing	
20		Protection overcharge, over discharge each cell	
21		Protection over and under temperature	
22		Isolation of battery if any of above occur	
23		Alert if there is a failure	
24		Communication with Battery inverter	
25	BMS Communication interface	RS485,Ethernatet	
26	BMS Communication protocol	Modbus RTU,Modbus TCP	

14.5 Diesel Generator

ITEM	SPECIFICATION OF 3-PHASE DIESEL GENERATOR		BIDDERS RESPONSE
1	Name of manufacturer, Brand name, Model, Type		
2	Type of Diesel generator	Synchronous generator	
3	Diesel Generating Set, water cooled, incl. sound and weather proofed canopy; Stationary version, incl. lifting hook; tropicalized, ready for use, fitted as complete unit on a rigid base frame (e.g. skid mounted), consisting of Motor, Alternator, Battery, Fuel tank and separate switch board and accessories mentioned below. Norms and reference values to be followed: VDE, EN, DIN, ISO or equivalent norms. In p articular VDE 0100, Part 551/560, VDE 0108, DIN ISO 8528, DIN ISO 30 46 and/or norms or other guidelines as may be mentioned in the present specification.		
4	Output power (Tolerance + 2,5 / -0 KVA) taking into consideration the environmental conditions	40 kVA	
5	Output power	40 kVA	
6	Fuel consumption at 50 % load	l	
7	Fuel consumption at 80 % load	l	
8	Overall efficiency	%	
9	Site of operation / Purpose / En vironmental conditions Outdoor installation up to +35°C, Altitude see, air humidity 70 %		
10	Environmental conditions	Ambient temperature up to +35°C	
11	CE declaration of conformity by the manufacturer exists. Please attach the document to your offer.		

12	Welded sectional steel base frame, warp resistant, lifting hook on each corner for easy lifting	
13	Motor, Norms and reference values: ISO 3046, DIN 6271, BS 5514	
14	Type: Diesel, direct injection, forced oil lubrication, fuel transfer pump	
15	Revs: 1500 rpm	
16	Speed regulation: electrical	
17	Cooling: water cooled, considering a surrounding temperature of 40°C	
18	Alternator, battery charging: Integrated 24V	
19	Starter motor: integrated 24V	
20	Starter battery fitted to the aggregate incl. hood, 24V, dry pre-charged	
21	Fuel tank: steel, fitted to the frame, incl. fuel level gauge. Tank capacity: at least for a 8 hours run under maximum continuous output.	
22	Motor brand and designation, Model and Type	
23	Number of cylinders and cubic capacity	
24	Fuel tank capacity	
25	Oil capacity	
26	Motor capacity as per ISO 3046-7 based on 25°C intake temperature, 25°C cooling water intake temperature, 1.000 mbar air pressure, 30% air humidity – (KW)	
27	Motor capacity as per ISO 3046 in reference of the environmental conditions, mechanical (KWm)	
28	Motor capacity as per ISO 3046 in reference to the environmental conditions, electrical (KWe)	
29	Fuel consumption as per ISO 3046-1 including attached pumps. Lower fuel heating value 42.700 KJ/kg Tolerance + 5% at PRP 100% load in g/KWh	
30	Lubrication oil consumption (ltr/h) under standard conditions	
31	Alternator brand, model, type	
32	Efficiency factor of Alternator	
33	Alternator: Norms and reference values: VDE 0530, BS 4999, UTE NFnC 51.111, IEC 34.1, NEMA MG 21	
34	Three-phase current alternator as per VDE 0530, internal pol machine with damping winding, self-regulating, self-starting	
35	Voltage rigidity: max 5 %	
36	Nominal voltage: Per phase 240V alternating current, 415 V three-phase current	
37	Frequency: 50 Hz	
38	Power factor: cos phi 0,8	
39	Insulation class: H or F	
40	Isolation good for tropic climate	
41	Radio interference suppression according to VDE 0875 “N”	
42	Protection class DIN 40050, IP 23	
43	G3 Classification according to DIN ISO 8528	
44	Exhaust system, sound protection	

45	Weather and sound proofed canopy incl. exhaust silencer. High corrosion resistance: stainless covered with zinc and made in dichromate. Large doors allow easy access to the generator set for service and monitoring purposes. Lockable doors with one window showing the control panel, fully assembled for immediate use. Exhaust system fully integrated (inner mounted).sound protection LWA below 89 dB (A)pW. Emergency stop button is accessible from outside enclosure.	
46	Please indicate:	
47	Acoustic power (LWA) [dB (A)]	
48	Acoustic pressure level at 1 m distance	
49	Acoustic pressure level at 7 m distance	
50	Acoustic pressure level at 10 m distance	
51	Control fittings / Measuring Instruments / Switch board	
52	Switch cabinet - vibration proof – fitted to the steel base frame - Digital control panel	
53	Motor protection accessories (Oil pressure, water temperature, excessive revs) Generator protection switch, thermic-magnetic overload protection, protection of Instruments and indicators	
54	Battery-charging control light, oil-pressure warning light, excessive temperature warning light, light test, excessive revs alarm, false start light, emergency-off light, central warning light	
55	Measuring instruments, switches; Ampere, Volt, frequency, operation hours counter, Energy production, emergency "off" button, manual mode switch	
56	30 m reinforced electrical cable for electrical power supply, under- or above ground use	
57	5 m yellow-green cable with ground pin	
58	Labeling of all components in English language	
59	Please indicate:	
60	Dimensions of one unit: (length x width x height)	
61	Weight of one unit in kg (without any fillings)	
62	Documentation	
63	Manual for installation, commissioning and use plus a spare parts catalogue for each part of the generator (motor, generator, switch board, wiring diagram) in English	
64	Spare parts / Maintenance parts / Consumables covering 1000 hrs of operation	
65	2 pcs. Oil filters	
66	1 pcs. Air filter	
67	2 pcs. Fuel filter ext.	
68	1 set of seals, screws, nuts, etc, for 1000 hrs of operation	
69	1 pcs. V-belt	
70	Standard tool set	
71	Standard tool set to provide maintenance and small repairs up to 1000 hrs of operation	

14.6 Data Monitoring

ITEM	SPECIFICATION OF MONITORING SYSTEM		BIDDERS RESPONSE
1	Name of manufacturer, Brand name, Model, Type		
2	Data logging and transmission of PV inverter data or charge controller	All inverter production data to be continuously transmitted via internet	
3		Programmable on from 1 min - 60 data resoluti min:	
4		DC current, DC voltage	
5		DC power, DC energy	
6.		AC current, AC voltage	
7		AC power, AC energy	
8		Ambient temperature (°C)	
9		Solar radiation (W/m^2)	
10	Option	Transmission data by GSM or of inverter equivalent	
11	One radiation sensor (precision >90%) for global horizontal irradiance for the PV technology. Installed in shadow free position with access for regular cleaning.		
12	One sensor corresponding with the monitoring system including to measure ambient temperature		
13	Option: Three phase meters to be installed to measure power delivered to the loads		
14	Data monitoring supply from DC power supply of installed battery storage with corresponding step down converter.		

ITEM	SPECIFICATION OF BALANCE OF SYSTEM (BOS)		BIDDERS RESPONSE
	The following material/Equipment will adhere to the prescribed standards		
1	Outdoor cabinets	UV and water resistant material, min IP 54	
2	Cabinets/enclosures (where applicable shall contain)	MCB	
3		MCCB	
4		SPDs, class II IEC 61643-11	
5		Operating 80 C temperature up to	
6		Non-metallic fiberglass enclosures with clear polycarbonate covers	
7	Electricity meter	Bidirectional, 3 phase class 0,5	
8	AC cabling- Inverter distribution to grid connection point	IEC 60364	
9		KS 04-192: 1988	
10		KS 04 -194: 1990	
11		KS 04 -187/188	
12		KS 04 -290: 1987	
13	Lightning protection	IEC 62305	
14	Miscellaneous accessories (if applicable) Conduit outlets and junction boxes	KS 04-179: 1983	

14.7 Balance of System (Required during installation)

ITEM	SPECIFICATION FOR DC CABLING AND CONNECTORS The following material/Equipment will adhere to the prescribed standards		BIDDERS RESPONSE
1	Fine copper for PV string connection to inverter		
2	Outdoor use TUV approval Nr.	TUV PfG 1169/08.2007	
3	Ozone resistant	EN 50396	
4	Flame retardant	IEC/EN 60332-1-2	
5	UV resistant	HD 605/A1	
6	Halogen free	EN 50267-2-1, EN 60684-2	
7	Acid + Alkaline resistant	IEC /EN 60811-2-1	
8	Low corrosively of gases	EN 50267-2-2	
9	Weather resistant	HD 605/A1	
10	DC wiring losses	Total DC wiring losses max. 1,5%	
11	DC connectors	EN 50521	
12		Crimped according to manufacturer instructions using only certified tools	

14.8 Installation

ITEM	INSTALLATION	BIDDERS RESPONSE
1	Complete installation of all components and the complete system (see attachment General Information, system description and scope of delivery). Price to be mentioned as lump sum. Excluding material (10.2 to 10.20).	
2	The installation of the solar PV hybrid power station on the site is in the scope of the contract. The tenderers are notified that they will need (or their local counterpart in Kenya) a V2 license to clear solar items from customs at the Mombasa port. They will need as per the regulations a C1 license for design and installation and minimum of a T1 certified solar technician in the team to perform the solar installation. Applications for both C1 and V2 licenses can be obtained directly from the Energy Regulatory Commission. It is however the contractor responsibility to keep schedule performance for the installation in the case they choose to apply directly for C1 and V2 licenses. The current list of C1 and V2 certified companies would be provided upon demand. The contractor refers to the design layout and the supply and installation description document for the installation services. Material for Pos. 10.2 to 10.17 based on initial estimates.	
3	AC breaker	
4	DC overvoltage protection	
5	PV Cabling, 6mm² black	
6	PV Clamping, MC4	
7	PV Grounding Cable, 4mm² black	
8	Grounding Rods, Steel	
9	Cable trays, 150mm x 3m	
10	Lightning Arrestors	
11.	AC Cabling, 50m, 6mm²	
12	Power Meter	
13	Energy Meter	
14	CT's for power measurement	
15	Power Measurement & Auxiliaries Cabinet	
16	3G Router	
17	Small parts (clamps, screws, smaller cables, etc)	
18	PV Framing	

14.9 Commissioning and training

ITEM	COMMISSIONING AND TRAINING ON SITE The following shall be carried out during commissioning	BIDDERS RESPONSE
1	Complete commissioning and trial operation of the system. Please indicate.	
2	Training on the operation of the power plant components, maintenance and monitoring of the system. General information, system description and scope of delivery. Please indicate	

15. Performance Guarantees

ITEM	PERFORMANCE GUARANTEES	BIDDERS RESPONSE
1	Upon commissioning of the solar PV hybrid power plant and 1 month of operation the final acceptance of the solar PV hybrid system will be confirmed after. During this one month the contractor should fix all installation problems that arise.	
2	After final acceptance, a 12-month defect liability period shall commence.	

PART II

Sub-Station Specifications

The Scope of the project;
A mini-grid comprising of photovoltaic solar (PV) generation, battery storage and a generator backup. The entire generation is to be synchronized and managed by the solar PV controllers at 415Volts and stepped to 11KV distribution network.
Protection at the HV (High Voltage) side shall be done with the 11KV Circuit breaker complete with its Control and protective relay panel and the LV protection up to the step up transformer to be enhanced by the feeder which shall be installed in the 20feet air conditioned containers provided by the contractor.

Specifications For 415 V Ac Metal-Clad Switchgear Board

1.0 General Specifications

1.1 Scope

This Specification covers the Design and Engineering, Manufacture, Testing at The Manufacturer's Factory, painting, packing for transport, insuring, shipping, delivering to the port of Kenya, landing, customs clearing, Local Transportation and Delivery to Site, Unpacking, Erection, Test and Commissioning of 415 V AC Indoor Metal Clad Switchgear Panels.

Subsequent paragraphs will give detailed descriptions and requirements for the Switchgear Panels, including Air Circuit Breakers, Current Transformers, Protection Relays, Metering, Measuring, Indicating and Control devices and other equipments/Devices, specified herein.

All these shall be housed in a 20 feet ISO (CSC certified) steel container. The steel container shall be new, factory tested and have protective painting of 2 coat RAL9001 epoxy and polyurethane so as to withstand normal atmospheric conditions for the tropics without requiring any housing. The Tenderer shall provide required physical protection for the cables between the generators and the control container as there shall be no cable trenches.

The minimum requirements for the control room container shall be as follows:
Sound proof by insulation panel
Air Conditioning sufficient for the control room
Door with anti-panic bar
Lighting with fluorescent tube 2 x 40w
2 power socket 10/16 amps + earth British Type
1 extinguisher 9 kg CO2
1 office desk
2 executive high back chairs
2 office chairs with arm rests
Integration of cabinet
20 feet ISO steel container

1.2 Standards

Ratings, characteristics, tests and test procedures, etc. for the 415V AC Metal-Clad Switchgear Board and all the Protection Relays, Measuring and Indicating Instruments and the control and monitoring devices and Accessories, including Current transformers shall comply with the provisions and requirements of the standards of the International Electro- technical Commission (IEC), and also relevant ANSI Standards where Specified.

The latest revision or edition in effect at the time of Bid Invitation shall apply. Where references are given to numbers in the old numbering scheme from IEC it shall be taken to be the equivalent number in the new five-digit number scheme. The Bidder shall specifically state the Precise Standard, complete with identification number, to which the various equipment and materials are manufactured and Tested. The Bid Document may not contain a full list of standards to be used, as they only are referred to where useful for clarification of the text.

1.3 Service Conditions

From the geographical condition, the area where the switchgear panels shall be installed is categorized into the tropical climate zone.
In choosing materials and their finishes, due regard shall be given to the humid tropical conditions under which the switchgear panels shall be called upon to work. The Manufacturer of the Switchgear panels shall submit details of his usual practice of tropicalization which have proven satisfactory for application to the Switchgear panels and associated equipments to prevent Rusting and Ageing in the Tropical Climate Zone. The Applicable standards for tropicalization shall be listed.

1.3.1 Climatic Conditions & Geo-Reference

Unless otherwise specifically stated in Particular Technical Specifications, any equipment or component or assembly shall be designed for the following service conditions:

Parameter	**Max**	**Min**
Ambient air temperature		
Outdoor	+40°C	-1°C
Indoor	+40°C	-1°C
24 hour average maximum	+30°C	-1°C
Relative humidity	90 -100%	
Height above sea level	1000 m	
EMC Class (IEC 61000)	Industrial environments	
Seismic coefficient	1.5	
Rainfall conditions		
Average	800-1700 mm/year	
Maximum	160mm in 24 hrs	
Annual mean isokeraunic level	Max 180 thunderstorm days	
Pollution (IEC 60815)	Heavy :class II	

Geo-Reference

Latitude (^{o})
Longitude (^{o})
Altitude (m) a.s.l.

Switchgear room Temperature

The Switchgear shall be installed in a room without Air conditioning but with ventilation to allow natural cooling.Therefore, All the Protection and control devices employed shall be capable of operating in this environment without failure for their designed life time. Particularly the power supply modules of the

Protection and Control devices shall be designed for minimum heat generation and effective heat dissipation to ensure that the temperature of these devices enclosed in the relay panels at the above listed Ambient temperatures shall not exceed the Maximum operating temperature of the device.

1.3.2 Tropicalization

(a) All equipment must be designed for operations in the severe tropic climate conditions and fully comply with climatic aging tests as per IEC 60932- class 2

Metals:

Iron and Steel are generally to be painted or galvanized as appropriate. Indoor parts may alternatively have chromium or copper-nickel plates or other approved protective finish. Small iron and steel parts (other than rustless steel) of all instruments and electrical equipment, the cores of electromagnets and the metal parts of relays and mechanisms shall be treated in an appropriate manner to prevent rusting.

Screws, Nuts, Springs, Etc

The use of Iron and steels shall be avoided in instruments and electrical relays wherever possible. Steel screws shall be zinc, cadmium or chromium plated or where plating is not possible owing to tolerance limitations, shall be of corrosion resisting steel. Instrument screws (except those forming part of a magnetic circuit) shall be of brass or bronze. Springs shall be of non- rusting material, e.g., phosphor-bronze or nickel silver, as far as possible.

1.4 Working Stress And Equipment/Apparatus Design

1.4.1 General

The design, dimensions and materials of all parts shall be such that they will not suffer damage under the most adverse conditions nor result in deflections and vibrations, which might adversely affect the operation of the equipment. Mechanisms shall be constructed to avoid sticking due to rust or corrosion.

The equipment and apparatus shall be designed and manufactured in the best and most substantial and workmanlike manner with materials best suited to their respective purpose and generally in accordance with up-to-date recognized standards of good practice.

The equipment shall be designed to cope with 0.10G acceleration of seismology on the centers of gravity.

All equipment shall be designed to minimize the risk of fire and consequential damage, to prevent ingress of vermin and dust and accidental contact with electrically energized or moving parts. The switchgear panels shall be capable of continuous operation with minimum attention and maintenance in the exceptionally severe conditions likely to be obtained in a tropical climate and
where the switchgear is called upon to frequently interrupt fault currents on the system and also where the duty of operation is high.

1.4.2 Strength and quality

Liberal factors of safety shall be used throughout, especially in the design of all parts subject to alternating stresses or shocks.

1.4.3 Design data low voltage equipment

Low voltage equipment and installation shall be designed in accordance with EMC directives. The rating and design criteria for low voltage equipment shall be as follows:

(i) AC Supply Rating system

Rated voltage between phase	415 V
Connection type	3ph 4wire
Rated voltage between phase to earth	240 V
Grounding system	Solid Earthing
Frequency	50 HZ
Voltage variation	+/-10%
Frequency variation	+/-2%
Power frequency 1 min, Test Voltage	3 kV

The three-phase supply shall be used for power circuit and the single- phase supply for lighting, indication, motor controls and similar small
power circuits.
Unless otherwise specified, the equipment provided under this Tender is to be capable of reliable operation at voltages as low as 85% of the rated voltage, and to withstand continuously up to 110% supply voltage above the rated value of 240V single phase or 415V AC three phase.

(ii) DC Auxiliary Supply Rating

Equipment/Device Rated voltage	24V DC
Connection type	2 wire
Voltage variation	18-36 V DC

The Auxiliary DC Supply shall be used for controls, indication, alarm, protection relays, and Circuit breaker tripping and closing circuit, e.t.c.
All equipment and apparatus including the Circuit Breakers, Protective relays, Control Devices and Accessories, Measuring and Indicating
Instruments and electronic equipment shall be capable of satisfactory operation at 80% to 125% of the rated supply voltage.

1.5 Basic Requirements For Electrical Equipment

All materials supplied under this Contract shall be new and of the best quality and of the class most suitable for working under the conditions specified. They shall withstand the variations of temperature and atmospheric conditions arising under working conditions without distortion, deterioration or undue stresses in any parts and also without affecting the suitability of the various parts of the Works for which they were designed.

(a) Electrical controls, auxiliaries and power supplies

(i) Responsibility for electrical control and auxiliaries

The Manufacturer shall provide all control, indication, alarm and protection devices and all auxiliary equipment with wiring and interconnecting cable which are integral parts of or are directly associated with or mounted on the Switchgear panels to be supplied under this Tender. The design of Protection and Control schemes for the switchgear panels shall be subject to approval by the Employer.

(ii) Operation and control

Interlocking devices shall be incorporated in the control circuit to ensure Safety, and Proper sequence and correct operation of the equipment.

(b) Measuring instruments

(i) All measuring instruments, including energy meters, shall be of flush-mounted, back-connected, dust-proof and heavy-duty switchboard type. Each measuring instrument shall have a removable cover, either transparent or with a transparent window. Each instrument shall be suitable for operation with the instrument transformers detailed in this specification, under both normal and short-circuit conditions.

(ii) For analog type instruments, scale plates shall be of a permanent white circular or rectangular finish with black pointer and markings. The scale range shall be determined from the current transformer and voltage transformer ratios and is given in the detailed specifications for each instrument.

All measuring instruments of analog type shall be approximately 110mm^2 enclosures and shall be provided with clearly readable long scale, approximately 240 degrees. The maximum error shall be not more than one and a half (1.5) percent of full-scale range.

(c) Indicating lamps

Indicating lamp assemblies shall be of the switchboard type, insulated for 24 V D.C. service, with appropriately colored lens and integrally mounted resistors for 110-volt service. The lens shall be made of a material, which will not be softened by the heat from the lamps.

For the Circuit Breakers, Red indicating lamps shall be used for “ON” position, green lamps for “OFF” position Indication and Amber for Transition

(d) Nameplate and Escutcheon Plates

(i) Each cubicle, panel, meter, switch and device shall be provided with a nameplate or escutcheon plate for identification with English description and also where appropriate the IEC Number on the front of the panel directly below each device as appropriate. On the inside of the control compartment of the switchgear panel, a yellow label, engraved in Black Letters and Numbers shall be fixed below each device. The Device Name/Number fixed on the inside of the control compartment shall correspond to the Name/Number used in the drawings. Each equipment shall be provided with a rating plate containing the necessary information specified in the relevant IEC standards.

(ii) The plates shall be made of weatherproof and corrosion-proof materials and shall not be deformed under the service conditions at the site. The entries on the plates shall be indelibly marked by engraving with black letter on a white background.

(e) Wiring

(i) General

(1) All wiring inside the switchgear panel shall be done with PVC insulated wire not less than 2.5 sq.mm, flexible cable. A suitable wiring duct system firmly fixed on the panel and having covers shall be installed for all inter-panel and front-to-rear panel wiring as well as for wiring within the panels, which will provide easy access for inspection and replacement of the wires.

(2) Wiring between terminals of the various devices shall be point to point. Splices or tee connection will not be acceptable. Wire runs from the duct to the device shall be neatly trucked or clamped.

(3) Exposed wiring shall be kept to a minimum, but where used, shall be formed into compact groups suitably bound together and properly supported.

(4) Instrument transformer secondary circuits shall be grounded only on the Terminal Block in the Control Compartment. Cable supports and clamp type terminal lugs shall be provided for all incoming and outgoing power wiring terminated at each panel. All wiring conductors (wires) shall be marked at each point of termination onto the terminal block or device. These wire markers shall be of an approved type and permanently attached to the conductor insulation. The method of ferruling shall be subject to approval by the Employer; It is however preferred that the Wire marker (ferrule)
correspond to the device terminal Number of the device or the Terminal Block Number where it is terminated.

(ii) Phase arrangement

The standard phase arrangement when facing the front of the panel shall be R-S-T-N, and P-N from the left to right, from top to bottom, and front to back for A.C three-phase and single-phase circuits. For DC circuit it shall be N-P from left to right, P-N from top to bottom and front to back. All relays, instruments, other devices, buses and equipment involving three-phase circuit shall be arranged and connected in accordance with the standard phase arrangement wherever possible.

(f) Terminal blocks

(i) Terminal blocks for control wiring shall be rated not less than 600V AC.

(ii) Each Individual Terminal Block shall be marked with a distinctive Number, which shall be the same Number used in the drawings, for identification purposes. The TB number shall be engraved in black numbers in white background.

(iii) Each set of terminal Block shall be identified by a label to distinguish it from another set of terminal block with similar Numbers for the individual terminal blocks. The labels used will match those used in the drawings.

2.0 Equipment And Switchgear Earthing

2.1 General

All the Compartments including the hinged doors of the Switchgear Panels and all the earthing points of the equipment installed/mounted in the Switchgear panels shall be connected to the grounding conductor at the bottom of the panel for external connection to the substation earthing System.

Earthing conductors shall be of annealed high conductivity copper. The earthing conductor on the primary equipment such as the Earth Switch and also for inter-panel earth-bonding as well as for external connection to the substation Earthing – grid shall be adequate to carry the rated switchgear short-circuit current of 65kA for 1 seconds.

3.0 Materials And Workmanship

3.1 General

Materials shall be new; the best quality of their respective kinds and such as are usual and suitable for work of like character. All materials shall comply with the latest issues of the specified standard unless otherwise specified or permitted by the Employer.

Workmanship shall be of the highest class throughout to ensure reliable and vibrations free Operations. The design, dimensions and materials of all parts shall be such that the stresses to which they may be subjected shall not cause distortion, undue wear, or damage under the most severe conditions encountered in service.
All parts shall conform to the dimensions shown and shall be built in accordance with approved drawings. All joints, datum surfaces and meeting components shall be machined and all castings shall be spot faced for nuts. All machined finished shall be shown on the drawings. All screw, bolts, studs and nuts and threads for pipe shall conform to the latest standards of the International Organization for Standardization covering these components and shall all conform to the standards for metric sizes

All materials and works that have cracks, flaws or other defects or inferior workmanship will be rejected by the Employer.

3.2 Assembly

Necessary items of equipment shall be assembled in the factory prior to shipment and Routine tests shall be performed by the Manufacturer as per the requirements of the latest issue of IEC as specified under each equipment in these specifications to demonstrate to the satisfaction of the Employer that the Switchgear panels comply with the requirements of the relevant IEC standards.

3.3 Casting

Casting shall be true to pattern, of workmanlike finish and of uniform quality and condition, free from blowholes, porosity, hard spots, shrinkage defects, cracks or other injurious defects, shall be satisfactorily cleaned for their intended purpose.

3.4 Operational Details

Instructions shall be engraved on the switchgear panel, on the circuit breaker compartment describing in simple steps how to carry out correct and safe Isolation, racking-in and switching operations on the circuit breaker. Similar details should be provided for the operation of the earth switch.

4.0 Protection, Cleaning And Painting

All outside panel surfaces shall be primed, filed where necessary, and given not less than two coats of synthetic undercoat. The finishing coat for the indoor installations shall be gloss paint.

Primer shall be applied to surfaces prepared in accordance with the plant manufacturer's instructions. The surface shall be wiped clean immediately prior to applying the paint. The primer and finish coats of paint shall be applied using the methods and equipment recommended by the manufacturer.

No painting or protection is required for finished or unfinished stainless steel parts.

The humid and tropical conditions shall be taken into account on selection of the paints and painting procedure.

5.0 Drawings

5.1 Before starting manufacture of the Switchgear panels, dimensioned drawings and data showing all significant details of the equipment and materials to be used shall be submitted to the Employer for approval. Four 4 weeks shall be allowed for discussions between the manufacturer and the employer leading to final Approval of the drawings by the Employer. Manufacturing of the switchgear panels shall not commence under any circumstances without receipt of Approved drawings by the Manufacturer from the employer.

5.2 The drawings shall be modified as necessary if requested by the Employer, and resubmitted for final approval.

5.3 The manufacture of the switchgear shall then proceed strictly in accordance with the Approved drawings and also in accordance with the Detailed specifications as contained herein. Where conflict may arise between the specifications and the approved drawings, the Specifications will take precedence, unless it's specifically indicated in writing on the Approved drawings that the conflicting clause in the specifications is superseded, or where following discussions between the Manufacturer and the employer, the employer gives approval in writing to supersede the conflicting clause in the specifications.

5.4 It is to be understood, however, that approval of the drawings will not relieve the manufacturer of any responsibility in connection with the works that the switchgear will fully comply with the relevant IEC/ANSI standards and with these specifications.

5.5 **All drawings submitted for approval or sent to the Employer for any other reason shall be in hard copy form and shall be sent by courier. Drawings for Approval shall not by any means be forwarded via e-mail or any other media except in hard copy form.**

Following completion of the manufacture of the switchgear Panels, the manufacturer shall carry out the following Checks and Tests before Inviting the Employer for Factory Acceptance Tests. Dimensional checks for the switchgear Board and the Busbars. Primary Injection Tests to check correct connection of the current transformers to the relays and instruments and Measuring devices.

Electrical Functional Tests
Mechanical/Interlock checks.

Any problems noted will be rectified and the switchgear panels shall only be shipped once the above tests and Checks are confirmed to be satisfactory.

Upon testing of the panels as in e) above the drawings will be edited to capture any minor wiring errors detected in order to produce the final construction drawings. A copy of the final construction drawings signed by the Manufacturer shall be send by courier to the employer before the panels are shipped.

All Protection and Control drawings shall be done on A4 - size paper. The function of each drawing shall be clearly indicated. Related drawings shall be arranged sequentially, and have the same drawing number but different sheet numbers. The drawings shall include the following;
All Protection and Control drawings shall be done on A4 - size paper. The function of each drawing shall be clearly indicated. Related drawings shall be arranged sequentially, and have the same drawing number but different sheet numbers. The drawings shall include the following;

(a) Ac single line drawing
(b) AC Schematics
(c) DC Schematics
(d) Functional Drawings
(e) Panel wiring and cable terminations and schedules
(f) Panel device layout drawing
(g) General layout drawings for the switchgear panels
(h) Relays and accessories list.

Five (5) Copies of Final As built drawings shall be supplied after commissioning of the Switchgear.

6.0 Operating And Maintenance Instructions

The Contractor shall supply detailed instructions manuals concerning the correct manner of assembling/Installing/Erection, configuring, setting, Testing and Commissioning, operating and maintaining the equipment and devices constituting the Switchgear Board, including the board itself. The maintenance details of each component shall also be described, including the frequency of inspections and lubrication.

The instruction manual shall include a separate and complete section describing the normal and emergency operating procedures for the Switchgear, and shall include explanatory diagrammatic drawings to facilitate understanding the instructions.

The Manufacturer shall, in preparing the instruction manuals, take into account the lack of experience and familiarity of the Operators with this type of equipment.

The manual shall give specific information as to oil, grease, or any other materials needed for maintenance operations. This information shall include brand names and manufacturer's numbers or designations for at least two brands available in Kenya, preferably manufactured in Kenya.

A complete set of the Operating and Maintenance manuals for All the Plant, Equipment and Accessories to be installed/mounted in the switchgear panels shall be sent to the Employer together with the Drawings for Approval. The operating and maintenance manuals shall be original copies printed by the manufacturer. Any illegible copies of the operating and maintenance manuals submitted shall be rejected by the employer.

Before Approval of Shipment of the switchgear Panels, Five (5) Copies of the Operating and Maintenance Instructions/Manuals shall be sent to the Employer by Courier. The operating and maintenance manuals shall be original copies printed by the manufacturer. Any illegible copies of the operating and maintenance manuals submitted shall be rejected

In addition, three (3) Soft copies of the manuals shall be sent to the employer by Courier.

7.0 Testing At Place of Manufacture

The manufacturer shall be responsible for performing or for having performed all the required tests specified under the specification for the switchgear and all the Current Transformers, Protection Relays, Energy Meter, Measuring and Indicating instruments.

Tender documents shall be accompanied by copies of Type test and Routine test reports & certificates for similar rated equipment for the purpose of tender evaluation. Type test reports & certificates shall be certified by the National Standards and Testing Authority (NSTA) of the country of origin or by a third party Reputable Testing Authority. Where a body other than NSTA is used to certify the type-test reports, a copy of the certificate of accreditation shall be attached. Current contact information of the testing and certification authority shall be provided. Tenderers should note that this requirement is Mandatory.

Upon completion of the manufacturing process, routine tests shall be carried out as per the respective IEC standards of each equipment as follows:

(i) Circuit Breaker IEC 60298, IEC 60947
(ii) Switchgear panels, IEC 60294
(iii) Current Transformers, IEC 60044-1
(iv) Voltage Transformer, IEC 60044-2
(v) Protection Relays and Measuring and Indicating Instruments, IEC 60255 & 51

Only Upon receipt of Authentic certified copies of the Routine Test Reports/certificates and special Tests shall the Employer give clearance for shipment of the Switchgear Board once all the other listed requirements on Drawings, Instruction and maintenance manuals and software are met.

8.0 Software

One copy of each different type of Software in a CD Rom, for Protection Relays and other measuring and Control Devices whose Configuration and Settings is Software based and the connection Cable (Two for each type of device) shall be sent to the employer by courier before Approval for Shipment of the Switchgear Board is granted by the Employer. All the software indicated in the Technical Schedules shall be supplied. The software shall also be capable of downloading and analyzing data form the Relay/measuring device.

It shall be possible to load the software into at Least 2No. Different Laptop Computers without requirement for additional licenses, in order to facilitate Operations. Where additional licenses are required, the cost shall be considered to have been included in the bid.

One b (1) set of hard cover manuals for each type of software Supplied providing detailed instructions for programming settings and configuration of the relays and other devices and downloading of data, shall be supplied with the switchgear.

9.0 Spare Parts

The manufacturer shall furnish spare parts as listed in the specifications.

The spare parts supplied shall be packed or treated in such a manner as to be suitable for storage under the climate conditions at the Site for a period of not less than two years, and each part shall be clearly marked with the description and purpose on the outside of the package. The manner of storage shall be recommended by the manufacturer.
Spare parts so provided shall be delivered with the switchgear to the employer's stores. Delivery of spare parts will not be deemed to be complete until the packages have been opened and their contents checked by a representative of the Employer.

10.0 Detailed Specifications For 415 V Ac Metal-Clad Indoor Switchgear Panels

Construction For Each Panel

10.1 The whole switchgear equipment and components shall be designed and constructed in accordance with IEC 60298 and IEC 60947. The Board shall be complete with all the relevant components including, Busbars, Circuit Breaker, Cable Compartment, Instrument Transformers, Protection Relays, instruments and controls.

10.1.1 The Switchgear Board, shall be constructed to 1P42 degree of Protection in accordance with IEC 60529. A type test Report for the Degree of Protection of the Switchgear panels from a third party Reputable Testing Laboratory or Certified by the National Standards and Testing Authority (NSTA) or a laboratory Accredited to the NSTA shall be submitted with the Tender for Evaluation Purposes.

10.1.2 The switchgear panel or cubicle shall be built up of separate metal clad-compartmented cubicles with earthed metal partitions. The compartments shall be for busbar, cable connection and current transformer, Air circuit breaker, and Protection and Control compartments.

10.1.3 The Air circuit breakers shall be mounted on an inbuilt carriage to facilitate Isolation and withdrawal of the Air Circuit Breaker. Where the carriage is fixed in the compartment and does not allow complete withdraw of the Air circuit breaker outside it's compartment, then a purposely built Trolley shall be provided equipped with a lowering/raising gear to lower the Air circuit breaker to the floor, and to raise the circuit breaker to it's compartment by one switching operator.

10.1.4 The complete switchgear shall be such that the complete switchboard is of flush-front design.

10.1.5 All the Protection Relays, Auxiliary Relays, Energy Meters Indication Lamps, Instruments, Control and selection switches and any other associated accessories will be mounted in the Protection and Control compartment. All the Protection Relays, Auxiliary Relays, Energy Meters Indication Lamps, Instruments, Control and selection switches and any other associated accessories will be mounted in the Protection and Control compartment.

10.1.6 The cable compartment should have an anti vermin guard plate giving protection against rats, rodents etc.

10.1.7 The Circuit breaker compartment door shall be provided with provisions for padlocking.

10.1.9 The doors shall be capable of withstanding the effects of maximum internal arcing fault without being blown off and causing danger to other equipment/personnel.

10.1.10 The busbar shall be single, three phase, air insulated. The primary busbars and connections shall be of high conductivity and electrolytic material, high grade copper, and shall be in unit lengths.

10.1.11 Busbars, connections and their support shall be rated 1600Amps continuously under ambient conditions and capable of carrying the short-time current associated with the short circuit ratings of the circuit breakers, of 65kA for 1 Seconds.

10.1.12 Busbars shall be extensible at both ends, such extension shall entail the minimum possible disturbance to the existing busbar.

10.1.13 Provision shall be made for locking busbar and circuit shutters separately in the Circuit Breaker compartment.

10.1.14 Provision shall be made for integral circuit earthing and for busbar earthing. Means of earthing shall be by circuit breaker or purposely built earth switch. Mechanical interlocks to ensure correct switching operation shall then be provided.

10.1.15 The earth switch shall be easy to operate by one operator and be spring loaded to ensure Effective Make Operation independent of the Operator Action. The earth switch shall be rated to make and carry for 3 seconds, the rated short-circuit current of the Air Circuit Breaker.

10.1.16 The Status of the earth Switch shall be visible from the front of the Panel.

10.1.17 The operation of the Earth Switch shall be set in such a way that during both the Close and Open Operations, a clearance of at least 9 inches shall be maintained between the operating handle and the bottom of the switchgear panel.

10.1.18 It shall not be possible to insert the Earth switch Operating handle into Position except when the Circuit breaker is in the Test or Isolated Position.

10.1.19 All earthing facilities shall be rated for fault making at the rated switchgear short-circuit current.

10.1.20 The Panel wiring for protection, instruments, indication and metering circuits and other control accessories shall be completely done. All circuits for connection to external cables such DC & AC auxiliary supplies, external tripping, and Indications shall be wired up to the terminal Block at the Back of the panel where external cables shall be connected. At least 12 spare terminals shall be provided on the terminal board for any future requirements.

10.1.21 It is emphasized that Each Switchgear panel will have a terminal block at the back of the panel where all external cables such as Auxiliary DC supply, shall be made.

10.1.22 Auxiliary 24V DC supplies for Circuit Breaker control, Alarm circuits and Protection relays, shall be controlled by suitably rated Miniature Circuit Breakers.

10.1.23 The cubicle shall be tropical vermin proof. The plates shall be of mild steel thoroughly cleaned by shot blasting or other approved methods. They shall then be given a primary coat and two coats of contrasting colour of durable and weather resisting paint. The final coat shall be gloss and of Admiralty Grey (Shade 632) as specified in BS 381C. The final thickness of the paint shall not be less that 80 Microns at any point within the switchgear panel

10.1.24 Anti-condensation heaters shall be provided inside each cubicle. They shall be located so as not to cause injury to personnel or damage to equipment. The heaters shall be controlled by a hygrostat with a variable humidity and temperature setting. The Heaters shall be dimensioned to ensure that condensation cannot occur within the switchgear panel.

10.1.25 The 240V AC supply, for the heaters shall be controlled by a suitably rated single pole miniature circuit Breaker.

All the switchgear panels shall be rodent and vermin proof.

10.2 Circuit Breakers

10.2.1 The circuit breaker shall be three pole operated, indoor type, Air Circuit Breakers.

10.2.2 The moving portion of each circuit breaker shall consist of a three-pole circuit breaker, operating mechanism, primary and secondary disconnecting devices, auxiliary switches, position indicators and necessary control wiring. The Auxiliary switches shall be of the plug-in type, with the male contacts mounted on the Breaker carriage and the female contacts on the plug-in cable connected to the Panel wiring. Other options may be considered where there is adequate proof that the auxiliary contacts will always be making firmly without mis-alignment. Finger contacts will however not be acceptable.

10.2.3 The circuit breakers of the same current and voltage ratings shall be fully interchangeable, both electrically and mechanically.

10.2.4 Name plate for the circuit breaker shall be provided with all the required details as per IEC Standards.

10.2.5 The circuit breaker operating mechanism shall be motor wound spring operated, power closing with electrical release and with provision for hand charge.

10.2.6 Mechanical indication shall be provided to indicate the state of the spring.

10.2.7 The operating mechanism shall be completely trip free both mechanically and electrically.

10.2.8 The circuit breaker shall have a mechanical operations counter

10.2.9 One mechanical ON/OFF indicator, with inscription "ON" white letters on red background and inscription "OFF" white letters on green background shall be provided for the circuit breaker.

10.2.10 One mechanical indication of the state of the spring inscription – SPRINGS CHARGED (white letters on red background); SPRINGS FREE, (white letters on green background) shall be provided for the circuit breaker.

10.2.11 Where the Circuit Breaker is used for Circuit or Busbar Integral earthing, the control wiring of the breaker housing should be such that when the breaker is in circuit earth or busbar earth positions it shall only be Operated mechanically and not electrically.

10.2.12 The Circuit Breaker Maintenance and Operations Manual shall contain clear instructions on the Maintenance requirements of the Circuit Breaker (if any), to prevent Switchgear failure in service, due to excessive Fault Current Clearance or any other cause.

10.3 Current Transformers

10.3.1 Current transformers shall be Cast Resin Type and shall be accommodated inside the cubicle, in a separate compartment.

10.3.2 The current transformers shall be in accordance with the requirement of IEC 60044-1 and shall have the specified accuracy under load conditions and shall be able to withstand the effect of short-circuit fault current rating of the switchgear, of 65kA for 1 seconds.

10.3.3 Current transformers shall have a rated burden as specified, sufficient for the connected Numerical Protection relays and Energy meters and instruments.

10.3.4 Copies of Type Test certificates and routine Test Reports/Certificates as per IEC 60044-1, of CTs of similar Rating and Class as the specified CTs shall be submitted with the Tender for tender Evaluation Purposes. The Specified CTs must be within the Product Range of the manufacturer.

10.4 Protection Relays

10.4.1 The Measurement relays shall be Flush mounted and of Numeric Design, with event recording, Fault recording, power measurement, and shall be in accordance to IEC 60255.*

10.4.2 Besides the communication port, the relays shall have a human – machine interface facility (MMI) with and LCD Screen where one can easily access relay information.

10.4.3 Relay contacts shall be suitable for making and breaking the maximum currents, which they are required to control in normal service. Where contacts of the protective relays are not sufficient for Circuit Breaker Tripping, auxiliary Trip relays shall be provided, in order to prevent Damage to output contacts of the Measuring relay.

10.4.4 Relay contacts shall make firmly without bounce and the relay mechanism shall not be affected by Panel vibration or external magnetic fields.

10.4.5 Relays shall be provided with clearly inscribed labels describing their functions and IEC Device Function numbers.

10.4.6 Relays shall be suitable for operation on the station D.C. supply without use of dropping resistors or diodes.

10.4.7 To reduce the effect of electrolysis, relay coils operating on DC shall be so connected such that they are not continuously connected from the positive pole of the station battery.

10.4.8 The relay Thermal rating shall be such that the fault clearance times on any

combination of current and time multiplier settings shall not exceed the thermal withstand capability of the relay. (Max. fault current = 25kA).

10.4.9 The relays shall be EMC 89/336/EEC compliant.

10.5 Indications And Instruments

10.5.1 All instruments shall be flush mounted and shall be in accordance with the requirement of IEC 51.

10.5.2 Each cubicle shall have the following indications:-

(i) One indicator lamp to show the breaker in closed position - RED colour

(ii) One indicator lamp to show the breaker in open position - GREEN colour

10.5.3 The instruments shall be supplied as described under each panel in the subsequent sections.

10.5.4 Power Cable Termination

Cable compartment design shall be suitable for heat shrinkable (or equivalent) jointing application termination. The compartment shall be adequate for connection of cables to evacuate the total load of 1600 Amps.

10.6 Accessories:

The following accessories shall be supplied with the switchboard at no extra cost:

Spring charging handle	FOUR SETS
Circuit breaker draw out handle	FOUR SETS
Recommended set of circuit breaker maintenance tools	ONE SET

10.7 Ratings Of Switchgear and Equipments

Generator and Feeder Air Circuit Breaker	Air
Interrupting Medium	
Number of poles	3
Highest equipment Voltage	600 V AC
Nominal System Voltage	415 V AC
One minute power frequency withstand voltage	3 kV
Impulse withstand voltage (BIL)	8 kVp
Frequency	50 Hz
Rated short time current	65 kA
Rated Short circuit current withstand	65 kA, 1 seconds
Auxiliary D.C. voltage for closing and tripping coils	24 V DC
Auxiliary a.c. voltage	240V AC, 50Hz
Tripping/closing coil auxiliary voltage	24 V DC
Spring charging motor supply	240 V AC
Rated normal Current	1600 A

10.7.2 Current Transformers for Generator and Feeder Panels

Ratings:

(i)	Rated Short time current (STC) withstand	:25 kA for 3 seconds
(ii)	Rated Voltage of the CT	:600 V
(iii)	One minute power frequency withstand voltage	:3kV
(iv)	Impulse withstand voltage	:8 kVp
(v)	Rated maximum continuous current	:1600 Amps

Ratio and class:

(i) Feeder Panels:

Core 1:	C.T Ratio	: 1600-800/1 A
	Class	:5P10
	VA	:10VA
Core 2:	C.T Ratio	:1600-800/1 A
	Class	:0.5
	VA	:10VA

(ii) Generator panels:

Core 1:	C.T Ratio	: 1600-800/1(Turns-ratio)

Class	: X
Imag	:<0.02 A
Vk	: >250 V
Rct	:10 Ohms

10.7.3 Tests

All switchgear shall be tested in accordance with the requirement of IEC 60298. Tests shall be carried out on the circuit breakers as per the requirement of IEC 60947. Current transformers shall be tested in accordance with the requirement of IEC 60044-1.

10.7.3.1 Schedule of Tests to be carried out at the Manufacturer's plant

(a) Test on Complete 415 V AC Switchgear Board

(i) Power frequency Withstand Test
(ii) Megger Test
(iii) Contact resistance test of Primary joints
(iv) Power frequency Withstand Test on secondary Wiring
(v) Dimensional Checks
(vi) Operational/Functional Tests
(vii) Primary Injection Tests
(viii) Calibration Tests on Relays and Instruments.

(b) 600 V AC Air Circuit Breaker

(i) Routine tests.
   1. Operation test.
   2. High Voltage test, dry. 3kV Power frequency Voltage test on controls and auxiliary circuits.
   3. Measurement of resistance of the main circuit.

(ii) Type Tests: Submit copies of Type test Reports and Certificate
   1. Mechanical endurance test
   2. Temperature rise test.
   3. Impulse voltage test
   4. Interrupting Capacity test.

NB: Copies of Type Test Certificates for similar rated Circuit Breakers and Certified by National Standards and Testing Authority body or Reputable Third Party Test Laboratory shall be submitted with the Tender for Evaluation Purposes.

(c) Current Transformer

Type and routine tests shall be carried out at the manufacturer's plant as per the requirement of IEC 60044-1, as listed below.

(i) Polarity Test and Verification of terminal markings
(ii) Ratio and phase angle error test (accuracy class composite error test)
(iii) Power frequency Tests on Primary and secondary windings

10.8 Protection Relays, Controls And Measuring Devices

Requirements For 415 V Ac Switchgear Panels:

10.8.1 General Requirements

Protection against electrical faults and abnormal conditions on 415 V AC Switchboard and the outgoing 33 kV feeders shall be conducted by the protective relays and associated switchgear. The Protection schemes shall be designed to ensure detection of all faults, fast discriminative fault clearance in order to ensure safety of personnel, equipment and continuity of Electric Power Supply.

10.8.2 Bill Of Materials:

(a) Feeder Panels Requirements

Each Feeder Panel shall be equipped with the following Protection Relays, Measuring and indicating devices, Controls and other Accessories.

(i) Three phase overcurrent and earth fault.
(ii) Combined Earth Fault and sensitive Earth Fault Relay.
(iii) Three Ammeters with MDI with face plates available for both CT ratios. The Ammeter shall indicate both the instantaneous Load current and also the Maximum Demand Load current since the last reset.
(iv) Energy Meter
(v) Voltmeter and Voltage Selector Switch, Circuit breaker control switch (Close, Open &Neutral), with a mechanical Lock, to prevent unintended tripping of the Circuit Breaker.
(vi) Sensitive Earth Fault (SEF) mechanical isolation link or switch.
(vii) Circuit Breaker ON(red) and OFF(green) Indication lamps.
(viii) Door switch Operated Lighting point and Bulb.
(ix) 3 Pin - Square Power Socket Outlet with red neon indicator.
(x) Suitably rated MCBs for Auxiliary 24V DC and for 240 V AC supplies.

(b) Common Alarm System

A common Alarm System shall be supplied equipped with the following:
(i) Urgent Alarm relay
(ii) Non-urgent Alarm relay. NB: The urgent and non-urgent Alarm relays will be separate Relays.
(iii) 16 window Annunciator relay.
(iv) Hooter.
(v) Suitably rated MCBs for Auxiliary 24V DC and 240 V AC supplies.

(c) Generator Panels Requirements

The Generator Panel shall be equipped with the following Protection Relays, Measuring and indicating devices, Controls and other Accessories:

(i) Three phase overcurrent and earth fault relay.
(ii) Reverse Power Relay.
(iii) Three Ammeter with MDI The Ammeter shall indicate both the instantaneous Load current and also the Maximum Demand Load current since the last reset.
(iv) Energy Meter.
(v) KiloWatt Meter.
(vi) Power Factor Meter.
(vii) Voltage meter.
(viii) Auto/Manual Selector Switch.
(ix) Voltage selector switch.
(x) Circuit breaker controlswitch (Close, Open & Neutral) with mechanical locking to prevent un-intended operation.
(xi) Circuit Breaker status ON(red) and OFF(green) Indication lamps.
(xii) Door switch Operated Lighting point and Bulb.
(xiii) 3 Pin - Square Power Socket Outlet with neon indicator.
(xiv) Suitably rated MCBs for Auxiliary 24V DC and 240 V supplies.

10.9 Protection Relays And Control Devices

Reference Standards IEC 60255: Electrical Relays

10.9.1 General Requirements

(a) The electrical Measuring protective relays shall be of Numeric Design. The Protective Relays and Auxiliary Relays shall operate successfully for any value of the DC supply voltage between 85% and 125% of the rated voltage of 24 V DC without exceeding the temperature rise limits for the operating coils.

(b) Each Measuring protection relay shall be of the Panel flush mounted, back connected, type with rectangular case. Each relay shall have a removable transparent cover or cover with a transparent window making the front of the relay visible. It is preferred that each measuring relay shall be of a withdrawable type from the front of the panel with sliding contacts, without opening the current transformer secondary circuits, disturbing external circuits or requiring disconnection of leads on the rear of the panels.

(c) Each protection relay shall be equipped with adequate electrically independent contacts, of adequate rating for Trip and alarm functions.

(d) Relays contacts shall be suitable for making and breaking the maximum currents, which they may be required to control in normal service. Where contacts of the protective relays are unable to deal directly with the tripping currents, Auxiliary Trip relays shall be provided. This will ensure safety for the protection relays output contacts.

(e) Relays contacts shall make firmly without bounce and the whole of the relay mechanism shall be as far as possible unaffected by vibration or external

magnetic fields.

(f) Relays shall be provided with clearly inscribed labels on the surface of the panel describing their application in words e.g., "Three Overcurrent & Earth Fault Relay" in addition to the IEC numbering and outside.

(g) The Numerical Relays will be equipped with an RS232 Communication Port to facilitate connection to a Laptop. Also a communication port shall be provided on each Numerical Relay for Remote Interrogation and Programming of the Numerical Relays.

(h) The Relays will also have an MMI with LCD screen and Keypad to facilitate manual Relay programming and Data access.

(i) Relay Operation due to system fault, shall be indicated by a Red L.E.D. and the fault details (flags) shall be displayed on the MMI. Both the Relay Fault flags and Red L.E.D shall be reset via Reset push buttons without opening the Relay Cover.

10.9.2 Detailed Specifications For Relays, Measuring And Indicating Instruments, Control Switches And Other Accessories

These specifications indicate the required performance characteristics for each of the Protection Relays and are in accordance with IEC 60255.

(a) Three phase over-current and earth fault relay

Should incorporate the following Features:

(i) Relay must be of Numerical Design.
(ii) Shall be suitable for mounting on the panel front.
(iii) Current setting range for overcurrent relay 0.2In-2.4In.
(iv) Current setting range for earth fault relay 0.05In-0.8In.
(v) I.D.M.T characteristics according to BS142 or IEC255 i.e. SI, VI, EI, LTI, including definite time for the high-set Elements.
(vi) Time setting multiplier 0.05 - 1.0.
(vii) Broken conductor protection feature
(viii) Highest Element for both overcurrent and earth fault with.
(ix) Protection, with a setting range of 1-30In and a definite time delay setting of 0 - 60 Seconds.
(x) Drop off /pickup ratio >90%.
(xi) Low transient overreach < 10%.
(xii) LCD screen where the Settings and Measurands can be read.
(xiii) Keypad for manual programming of settings and data access Serial RS232 Port for Programming of the Relay and Access of Data using a Laptop Computer on the front surface of the Relay.

. **(b) Earth Fault Relay**

Should incorporate the following Features:

(i) Relay must be of Numerical Type.
(ii) Current setting range 0.05In-0.8In.
(iii) I.D.M.T characteristics according to BS142 or IEC255 i.e. SI VI, EI, LTI, including definite time for the high-set Elements.

(iv) Time setting multiplier 0.05 - 1.0.
(v) Highest Element with a setting range of 1-30In.
(vi) Circuit Breaker Maintenance.
(vii) Drop off /pickup ratio >90%.
(viii) Low transient overreach < 10%.
(ix) LCD screen where the Settings and Measurands can be read.
(x) Keypad for manual programming of settings and data access Serial RS232 Port for Programming of the Relay and Access of Data using Laptop Computer on the front surface of the Relay.

(c) <u>Sensitive Earth Fault Relay</u>

Should incorporate the following Features:
(i) Relay must be of Numerical Type.
(ii) Current setting range for earth fault relay 0.010In- 0.8In.
(iii) Definite time delay characteristic; setting range, 0- 30 Seconds.
(iv) Drop off /pickup ratio >90%.
(v) Low transient overreach < 10%.
(vi) LCD screen where the Settings and Measurands can be read.
(vii) Keypad for manual programming of settings and data access.
(viii) Serial RS232 Port for Programming of the Relay and Access of Data using a Laptop Computer on the front surface of the Relay.

(d) <u>Reverse Power Relay</u>

Should incorporate the following Features:
(i) Relay must be of Numerical design.
(ii) Directional Power setting range, 0.2 to 20%.
(iii) Definite time Delay; 0.4 to 10 seconds in suitable steps.
(iv) LCD screen where the Settings and Measurands can be read.
(v) Keypad for manual programming of settings and data access Serial RS232 Port for Programming of the Relay and Access of data using a Laptop Computer on the front surface of the Relay.

<u>Annunciator Relay Unit</u>

(e)
(i) Shall have Silence, Accept and Reset, push buttons, to control the Alarms.
(ii) Shall be equipped with At Least 16 separate alarm Elements.
(iii) Each of the elements shall be freely assigned to one of two common output.
(iv) Alarms; Urgent and NON-urgent Alarm.
(v) Each Alarm Element shall have a Red L.E.D. to indicate ON status. It shall also have provision for fixing of Identification Label changeable on site. A flashing Alarm element shall be clearly visible.
(vi) The Urgent and Non-Urgent common Alarms Shall be freely configurable to the output Relays.
(vii) High Immunity against Electrical interference.
(viii) Relay output for audible alarm and for self supervision shall be provided.

(ix) Integrated event register to provide analysis of the latest sixteen (16) events.

(f) Circuit breaker Close/Open control Switch

The switch shall have a mechanical interlock to prevent accidental operation of the switch. It shall have a close, Neutral and Open positions engraved on the switch. After an operation, the switch shall return to the neutral Position by spring Action.

(g) Indicating Instruments, Directly connected

ALL the instruments shall be of Moving Iron type

(i) The IP Protection Class shall be IP54.

(ii) Accuracy class shall be 1.5, with maximum tolerated error of □1.5% of final scale value.

(iii) Overload withstand shall be at least 20% continuous.

(iv) All instruments shall be suitable for continuous operation under Tropical Climatic conditions.

(v) Ammeter Instrument with MDI– 1600A

Indicating Range, 0 – 1600 A for current input of 0 – 1A
Full Scale Deflection, 1600 A
Black Scale on white background
Dimensions, 96X96 mm.
Shall have a resetable maximum demand indicator having a different color from the normal pointer as well as the normal instantaneous demand pointer.

Shall be Suitable for Flush Mounting on the panel.

(vi) Voltmeter Instrument - 415 V AC

Indicating Range, 0 – 500 V AC
Black Scale on white background
Dimensions, 96X96 mm.
Suitable for Flush Mounting on the panel

(vii) Signaling Hooter

The actuator system shall consist of a strong, non polarized electromagnet with an impact resistance sturdy casing.
Rated frequency 50 HZ.
Rated voltage shall be 240V AC; +6/-10 %
Protection degree shall be IP 55
Operating mode continuous
Volume approximately 108 dB(A) 1 ¼ m
Connection terminals shall be 2.5 mm^2

10.10 Detailed Specifications For The Energy Meters

NB: These energy meters are for tariff metering similar to those used by Utilities

These specifications are for energy meters to be installed on the switchgear panels for purposes of Recording delivered Electrical Energy, and are in accordance with IEC 61334-4-4-1(DLMS Standard protocol).
The Energy Meter Supplied shall meet all the requirements detailed below:
The meters shall conform fully to IEC 687 for class 0.5S Energy Meters and any other relevant specifications.
The meters shall be programmable and relevant software and connection cable to laptop shall be provided. Meters complying with IEC 61334-4-4-1(DLMS Standard protocol) shall be preferred. The meters shall have memory and be capable of storage of at least 12 months load profile and other data.
The meters shall be capable of bi-directional metering so as to record faithfully, both export and import quantities. The accuracy shall be as per IEC 687 in both directions. The quantities to be displayed shall be determined by the user through use of Software that shall be provided. The meters shall be configurable for use in three phase 3/4-wire networks systems as follows:

3x240/415 V, 10 (100) A
3x240/415 V, /5 (1) A
3x /110V, /5 (1) A

The meters shall be usable on phase voltages of magnitudes ranging from 100V to 500V, 50 Hz. Meters with voltage-surge protection that meets IEC 687 specifications. The meters shall be for flush panel mounting. The meters shall have a non-volatile memory so as to ensure no loss of data during power failures. Security passwords and switches shall be provided to prevent unauthorized programming of the meter. The meters shall be fully year 2000 compliant and a certificate of confirmation shall accompany the tender.

The meters shall be suitable for operation in any part of the Republic of Kenya where the climate varies largely from temperatures between -5 and 40 Degrees Celsius and relative humidity reaching 95% in some parts. Operating altitudes ranging from sea level to 2200 meters above sea level. The meters shall support multi-tariff metering.
The Meters shall incorporate instrumentation for the following measurands:-
MW, MVAR, MVA, p.f., Phase Currents, Phase voltages and the angle between individual Phase Voltage and corresponding phase current. This measurands shall be visible on the Meter display.
The meters MUST have a capability of freezing billing readings on any selected date of the month.
The meters will measure maximum demand for MW, MVAR and MVA and these will be accessible on the Meter display. The Demand integration period will be programmable.

The CT and VT ratios shall be programmable. The meters shall have an accurate internal quartz controlled clock. It should be possible to reset the clock without loss of billing data. The supplier shall show proof of ISO 9000 and ISO 14000 standards compliance by attaching copies. The meters shall be provided with adequate sealing facilities to prevent tampering. The nameplate and meter details shall be clearly marked using materials and colors that are durable and indelible.

In addition to requirements of IEC 687 the name-plate shall carry the following particulars:
The inscription " The property of REA"
Owner's serial numbers as directed with a minimum 5mm figure height.
Year of manufacture.

The meter base cover shall be of non-metallic, non-hygroscopic, flame retardant, polished material having high impact-resilience and low dirt absorption properties. The front cover may be of translucent material with a clear transparent front. The meter shall have a minimum of three sealing - provisions for the meter body, terminal cover and front cover (where applicable).

The meter terminal cover shall be the normal short length with provisions of easy bottom breakage for cable entry. The terminals shall be of bottom entry, and the arrangement shall be:

L1 L 1: L2 L2: L3 L3: N or
I1 V1 I1: I2 V2 I2: I3 V3 I3: N

The accuracy shall be Class 0.5. The meter errors shall comply with the requirement IEC 687 and shall be adjusted at the manufacturer's works to be within between low and high load and shall exhibit good stability. The meter shall have a warranty against any defects, which may develop due to faulty material, calibration, transportation or workmanship for a period of not less than eighteen months from the date of delivery. All defective meters shall be replaced at the supplier's cost.

The following drawings and information shall be required with the tender:
Meter drawing giving all the relevant dimensions.
Wiring diagrams.
Description leaflet including details of programming of the meters
User's and service manuals.

10.11 Schedule

The Tenderer shall after reading through the Technical Specifications and the Tender Documents in general complete the technical schedules below. The completed schedules shall accompany the bid.

ANNEX B – TECHNICAL REQUIREMENTS FOR SWITCHGEAR

I	SWITCHGEAR PANEL			
	DESCRIPTION	**REREC'S REQUIRE M ENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of document and page No.**
1	Manufacturers name	State		
2	Manufacturers letter of authorization	Provide copy		
3	Copy of ISO 9001/2 certificate.	Provide copy		
4	Type or designation number of Switchgear offered.	To provide		
5	enclosure [IP] class of protection	IP42		
6	Rated voltage	600 V		
7	Rated power frequency withstand	2kV		
8	Rated lighting impulse withstand	8 kVp		
9	Metal clad compartments [CB, Busbar, LV, CT& Cable] attach layout drawing	4		
10	Busbar material	Tinned copper		
11	Dimensions [WxHxD [attach layout drawing]	Provide		
12	Short circuit withstand	25kV, 3 sec		
13	Lockable door with viewing glass in CB compartments.	Yes		
14	Shutters for Busbars [red] and circuit [yellow] provided.	Provide		
15	Busbar rating	1600A		
16	Circuit rating - Incomer	1600A		
17	Circuit rating - Feeder	1600A		

II	600 V AC AIR CIRCUIT BREAKER			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of document and page No.**
1	Manufacturers' name	State		
2	Type or designation number of circuit breaker offered	Indicate		
3	Name of manufacturer of vacuum interrupter	Provide		
4	Rated circuit breaker voltage	600 V		
5	1-minute power frequency withstand	2kV		
6	Impulse withstand voltage	8kV		
7	Rated short circuit current and withstand	65kA, 1 sec		
8	Auxiliary DC voltage for closing and tripping coils	24 VDC		
9	Auxiliary AC supply	240 VAC		
10	CB mechanism	Motor wound spring		
11	Visible spring charged mechanical indication on CB as per specifications.	Provide		
12	Visible CB ON/OFF indications as per specifications	Provide		
13	Connection of CB to auxiliary panel circuits via a plug-in cable	Yes		
14	Operations counter	Provide		
15	ACB Continuous Current Rating	1600 A		

III	CURRENT TRANSFORMERS			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of document and page No.**
1	Manufacturers name	Indicate		
2	Type or designation number of CT	Indicate		
3	Rated voltage of offered CT	600 V		
4	1 minute power frequency withstand voltage	2 kV		
5	Impulse voltage withstand	8 kVp		
6	Short-circuit withstand current and duration	65kA, 1 sec		
7	Feeder Panel CT details Ratio - 1600-800/1A Core 1 - Cl.X, Uk>250 V Core 2 - 15VA, 5P10 Core3 - 15VA, cl 0.5	 Yes Yes Yes Yes		
8	Generator Panel CT Details Ratio 1600-800/1A Core 1: clx; VR≥250V; Ie≤0.02A Core 2: 15 VA, 5P10 Core 3: 15 VA cl 0.5	 Provide Provide Provide Provide		

IV	PROTECTION RELAYS, AUXILIARY RELAYS AND CONTROL DEVICES:			
[a]	THREE PHASE OVERCURRENT AND EARTH FAULT RELAY			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers	State		
Ii	Type of designation name	State		
Iii	Design	Numeric		
Iv	Flush mounting on panel	State		
V	One time delayed element and two high set elements	Provide		
Viii	MMI with keypad and screen	Provide		
Ix	Software to be provided –	Provide		
X	2 No. connection cable from relay to laptop computer to be provided	Provide		
Xi	Serial RS232 port	Provide		

[b]	EARTH FAULT RELAY			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers name	Sate		
Ii	Type or designation name	State		
Iii	Design	Numeric		
Iv	Flush mounting on panel	State		
V	One time delayed element and two high set elements	Provide		
Vi	Software to be provided – name	Provide		
Vii	MMI with keypad and LCD screen	Provide		
Viii	Serial RS 232 port	Provide		

[c]	SENSITIVE EARTH FAULT RELAY			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers name	Sate		
Ii	Type or designation name	State		
Iii	Design	Numeric		
V	Software to be provided – name	Provide		
Vi	MMI with keypad and LCD screen	Provide		
Vii	Serial RS 232 port	Provide		

[d]	THREE-PHASE DIRECTIONAL POWER RELAY			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers name	Sate		
Ii	Type or designation name	State		
Iii	Design	Numeric		
Iv	Directional Power Setting Range	State		
V	Flush mounting on panel	State		
Vi	Definite time delay	Provide		
Vii	Software to be provided – name	Provide		
Viii	MMI with keypad and LCD screen	Provide		
Ix	Serial RS 232 port	Provide		

[e]	BIASED DIFFERENTIAL RELAY FOR GENERATOR			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers name	Sate		
Ii	Type or designation name	State		
Iii	Design	Numeric		
Iv	Relay setting range	State		
V	Magnetising Inrush feature	To provide		
Vi	CT ratio Compensation settings			
Vii	Flush mounting on panel	State		
Viii	Definite time delay	Provide		
Ix	Software to be provided – name	Provide		
X	MMI with keypad and LCD screen	Provide		
Xi	Serial RS 232 port	Provide		

[f]	ANNUNCIATOR RELAY UNIT			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT**
I	Manufacturers name	State		
Ii	Type or designation name	State		
Iii	Incorporates 16 Alarm elements	State		
Iv	Has RED LED for visual indication	Provide		
V	Has silence, accept and rest push buttons	Provide		
Vi	Alarms freely assigned to urgent or non-urgent bus-wires	State		
[g]	**CIRCUIT BREAKER CLOSE/OPEN SWITCH**			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
I	Manufacturers name	State		
Ii	Type or designation name	State		
Iii	Close and open position marked on the escutcheon plate	State		

[h]	DIRECTLY CONNECTED INSTRUMENTS			
	DESCRIPTION	**REREC'S REQUIREMENT**	**TENDERER'S DETAILS/ RESPONSE [Enter value or Yes or No as appropriate]**	**EVIDENCE FROM SUPPORT DOCUMENT: Name of Document and Page No.**
	1 AMMETER WITH MDI- 1600A			
I	Manufacturers name	State		
Ii	Type or designation name	State		
Iii	96 mm x 96 mm	State		
Iv	Flush panel mounting	State		

PART III

Lv Single Core Aluminium Cables (Pvc)		
0.	**Fore Word**	
	0.1	This standard lays down specification for LV single core PVC insulated cables.
	0.2	This specification is intended for procurement of materials and does not include provision of contract.
	0.3	This specification is based on IEC 502 and BS 6346. It is subject to revision as and when required.
	0.4	This specification supersedes all specifications for LV single core PVC insulated cables issued before the revision date.
1.	**Scope**	
	1.1	This specification is for single core, stranded aluminium conductors, polyvinyl chloride (PVC) insulated, armoured, PVC outer sheathed power cables for operation up to and including 600 volts to sheath and 1000 volts between conductors.
	1.2	This specification is for following cable sizes:
		630 sq. mm Aluminium conductor PVC insulated single core cable.
		300 sq. mm copper conductor PVC insulated single core cable.
2.0	**Materials And Construction**	
	2.1	The cable shall be made from circular stranded compact plain aluminium conductor as per IEC 228.
	2.2	The insulation shall be polyvinyl chloride (PVC) complying with the requirement of IEC 502 for type PVC/A.
	2.3	The insulation shall be applied by extrusion process and shall form a compact homogeneous body. The insulation shall concentrically cover the conductor
	2.4	Extruded over-sheath shall be of black polyvinyl chloride (PVC).
	2.5	The cable shall be clearly and permanently embossed with the following information throughout the length of the over-sheath. Letters and figures raised and consist of upright block characters. Minimum size of characters not less than 15% of average overall cable diameter.
		600/1000 VOLTS PVC CABLE
		Year of manufacture
		(Example: '600/1000 VOLTS PVC CABLE 1996')

3.0	**Standard Sizes And Characteristics**				
	3.1	The characteristics of the cables shall comply with the following table			
		Item		Characteristics	
		Conductor resistance		Not more thank the value indicated	
		A.C. withstand voltage		To withstand the indicated value for 5 min.	
		Insulation resistance		Not less than the value indicated.	
		Tensile strength	PVC	Tensile strength, minimum	12.5N/mm (1.27 Kg/mm)
		Ageing requirement*	PVC	Elongation, Minimum percentage of unaged value	150% 75 - 125%
	* Treatment: PVC temperature 100 - 20°c duration 168 hrs				
	3.2	The cable shall conform with the following requirements			
		Cable size		630 sq. mm	300 sq. mm
		Nominal sectional area		630 sq. mm	300 sq. mm
		Thickness of insulation		2.8 mm	2.4 mm
		Thickness of outer sheath		2.2 mm	2.2 mm
		Nominal overall diameter		38.8mm	28.0 mm
		Approximate net weight		6200 kg/km	3100 kg/km
		Test voltage		3kV/5min	3kV/5min
		Maximum conductive resistance		0.007 ohms/km	0.0120 ohms/km
4.0	**Tests**				
	4.1	The cable core, sheath and completed cable shall be tested in accordance with the requirements of BS 6346.			
5.0	**Packing**				
	5.1	The cable shall be wound on wooden drums such as to prevent damage during transportation. The wooden drums shall be made from treated timber resistant to termite attack.			
	5.2	The following description shall be marked on one flange of the reel			
		(a)	Direction of rotation of the reel		
		(b)	Type of cable		
		(c)	Number of conductors and size		
		(d)	Length		
		(e)	Net weight and gross weight		
		(f)	Manufacturer’s name		
		(g)	Year of manufacture		

6.0	References	
	6.1	The following documents were referred to during the preparation of this specification. In cases of conflict, the provisions of this specification shall take precedence.
		Unless otherwise specified, the latest revision, edition and amendments shall apply
		IEC 502:(1983): Extruded solid dielectric insulated power cables for rated voltages from 1 kV up to 30 kV.
		IEC 228(1978): Conductors of insulated cables.
		BS 6346 PVC insulated cables for electricity supply

PART IV

Specifications for 0.415/11kV Step-up Transformer

ANNEX C – TECHNICAL REQUIREMENTS FOR STEP-UP TRANSFORMER

TECHNICAL PARTICULARS FOR 0.415/11kV TX

1	2		3	4
Item	**Description**		**Schedule 1 (REREC' S REQUIREMENT)**	**Schedule 2 (TENDERER' S OFFER)**
1	Quantity		1	
2	Transformer Rating	kVA	600	
3	System Frequency	Hz	50	
4	Transformer external paint		Dark Admiralty Grey Colour No. 632 as per BS 381C	
5	Corrosive environment		High	
6	Dimensions overall height overall length overall width Total mass	 mm mm mm kg	 State State State State	
7	Tank type		Breathing	
8	Tank sealing;		Bolted	
9	Under-base;		Flat	
10	Skids and Jacking lugs for concrete plinth mounting		40 mm diameter axle holes	
11	Details of jacking pads		State	
12	Lifting lags for cover for tank for core		 To provide To provide To provide	
13	Terminations		Cable box	
14	Position of bushings		11kV: Top, LV: Cable Box	
15	Medium-voltage bushings material/colour creepage distance phase to earth clearance phase to phase clearance Low-voltage bushings material/colour creepage distance phase to earth clearance phase to phase clearance Terminal: stem & nuts or clamp	 mm mm mm mm mm mm	 Brown Porcelain 25 mm/kV Specify Specify Brown Porcelain 25 mm/kV Specify Specify Clamp pad	

16	Cooling method		ONAN	
17	Core type		Laminated stackings	
18	Core clamping		Specify	
19	HV Winding		Full coils of electrolytic copper	
20	LV Winding		Electrolytic copper coils or copper foils	
21	Primary voltage Secondary voltage Number of phases;	V V	415 11000 Three phase	
22	Rating of neutral terminal		As phase terminal	
23	Tap Changer		NLTC, □2X2.5% Tapping range	
24	Vector symbol		dYN11	
25	Losses corrected to 75°C no-load losses full load cu losses full load total losses 25% loading 50% Loading 75% Loading 125% Loading Transformer efficiency at unity power factor, rated voltage and full load (75°C)	 W W W W W W W %	 Specify Specify Specify Specify Specify Specify Specify Specify	
26	Impedance voltage maximum tap nominal tap minimum tap	 % % %	 Specify Specify Specify	
27	Insulation level medium-voltage low-voltage	 kV kV	 38/95 5	
28	BIL Tests (IEC 60076)		To be done at 95kV during factory visit (clause 5.3)	
29	Temperature Rise Test (IEC 60076)		To be done during factory visit (clause 5.3)	
30	Routine Tests (IEC 60076)		To be done during factory visit (clause 5.3)	
31	Transformer Leakage Test		To be done during factory visit (clause 5.3)	
32	Tank Thickness		Specify (Not less than 8.50mm)	
33	Transformer Bachholz Relay fitting		To provide	
34	Transformer pressure relief valve		To provide	

PART V

Specification for 11 KV Circuit Breakers (Triple Pole)

FOREWORD

This standard specification has been prepared by KPLC and adopted by REREC and lays down specification for 11 KV Circuit Breaker.

The specification is intended for use in procurement of the Circuit Breaker from manufacturers. The specification is based on IEC 56 and BS5311 and is subject to revision as and when required.

It shall be the responsibility of the manufacturer to ensure adequacy of the design and good engineering practice in the manufacture of the 11 KV Circuit Breaker. The manufacturer shall submit information, which confirms satisfactory service experience with products, which fall within the scope of this specification.

1. SCOPE

This specification is for outdoor live tank 11 KV SF_6 circuit breaker together with controls, auxiliary equipment and support structure.

The specification is for triple pole operated circuit breaker.

2. REFERENCES

The following documents were referred to during the preparation of this specification; in case of conflict, the requirements of this specification shall take precedence.

IEC 60056: High Voltage alternating current circuit breakers.

IEC 60376: Specification and acceptance of new sulphur hexafluoride.

IEC 144: Degree of protection of enclosures for low voltage switch gear and control gear.

BS 5311: Specification for A.C. circuit breakers of rated voltage above 1 kV.

3. TERMS AND DEFINITIONS

For the purpose of this specification the definitions given in the references mentioned in clause 2 shall apply.

4. REQUIREMENTS

4.1. SERVICE CONDITIONS

4.1.1 Operating conditions

4.1.1.1 The circuit breaker shall be suitable for continuous outdoor operation in tropical areas with the following atmospheric characteristics:

(a) Altitude: 2200m above means sea level

(b) Pollution: Heavy saline atmosphere

(c) Humidity: Up to 90%

(d) Ambient temperatures of $+30^{o}$ C average, ($+40^{o}$ C Max. and -1^{o} C Min.)

(e) Isokeramic level: Up to 180 thunderstorm days.

4.1.2 The circuit breaker shall be connected to an overhead system which is generally unearthed (without aerial earth wire).

4.2 CONSTRUCTION

4.2.1 The circuit breakers shall be three pole operated, out-door type, SF_6 gas insulated and shall comply with the requirements of IEC 60056 and/or BS 5311.

4.2.2 All the three poles shall be interconnected by a suitable shaft, linked to the operating mechanism so that poles are operated simultaneously with common gas pressure monitor.

4.2.3 All the three poles of circuit breaker shall be operated by local electrical from the mechanism in the housing and remote electrical from remote panel.

4.2.4 The mechanism box shall have a mechanical facility for manually operating the three poles.

4.2.5 (a) The circuit breaker shall have SF_6 gas for electrical interrupting medium.

(b) The SF_6 gas shall comply with the requirement of IEC60 376 and be suitable for use in the circuit breaker when it is operated under the service and system conditions.

(c) Sufficient gas shall be provided for filling the circuit breaker at installation with additional 20% for any losses.

(d) When the circuit breaker is in closed position a rapid fall in the SF_6 gas pressure, to a level below that at which safe operation is possible shall not result in tripping the circuit breaker. A remote alarm indication to signal this condition shall be provided.

4.2.6 Insulation creepage distance shall not be less than 25mm per kV of maximum operating voltage between phases.

4.3 OPERATING MECHNANISM

4.3.1 (a) The operating mechanism shall be suitable for mounting at the circuit breaker supporting structure, and below the circuit breaker in a weather-proof, dust-proof, vermin-proof and well ventilated housing.

(b) The degree of protection shall be class IP 54 as per the requirement of IEC 144.

(c) The housing shall be provided with padlocking facility.

4.3.2 Operating mechanism shall be trip free during the entire closing sequence.

4.3.3 (a) Operating mechanism shall be provided with motor wound spring charging mechanism with provision for hand operated manual charging. Pressure actuated mechanism **shall not** be accepted.

(b) The Motor shall be universal with operating voltage of either 110 Volts d.c or 110 Volts a.c.

4.3.4 A set of at least five normally closed and five normally open spare potential free contacts shall be provided for remote electrical indication as well as electrical interlocking and shall be wired to a terminal block in the housing.

4.3.5 A minimum of twenty (20) spare terminals shall be provided for connection to the current and voltage transformers.

(a) Sixteen (16) of these spare terminals shall be specifically used for current transformers and shall be capable of carrying 10Amps continuously and have facilities for shorting terminals.

(b) Four (4) of these terminals shall be used for the voltage transformer and shall have facilities for isolation.

4.3.6 The circuit breaker shall be provided with Local/Remote selector switch. The selection of the local operation shall inhibit the operation of the circuit breaker from any remote source.

4.3.7 (a) The circuit breaker closing circuit shall be blocked in case the SF_6 gas pressure drops below the allowed operational value.

(b) The manufacturer shall state the pressure levels of SF_6 gas alarm and block conditions.

(c) Two spare contacts shall be provided from the gas relay for alarm and blocked state indications. These spare contacts shall be wired up to the terminal block.

4.3.8 The circuit breaker shall be provided with a local switch for Open/Neutral/Close operation.

4.3.9 Mechanically operated indication to show the status of the circuit breaker operations (open/close and springs charged/discharged) shall be provided.

4.3.10 The circuit breaker shall be provided with suitable terminals for connecting 3" (outside diameter) tinned copper tubes.

4.3.11 The circuit breaker shall be provided with means to prevent contact pumping should the circuit be energized while tripping command is issued.

4.1.12 Mechanical interlock arrangement shall be provided on the mechanism such that it shall not be possible to withdraw the interlock with circuit breaker in closed position.

5 RATINGS

	Description	**Rating**
1	Nominal Voltage	11 kV
2	Highest Voltage	12 kV
3	Frequency	50 Hz
4	Normal Current	800 Amps
5	Rated short circuit Current	25KAmps
6	Duration of short circuit	3 Sec.
7	First pole to clear factor	1.5
8	Transient recovery voltage peak value	62 kV
9	Operating sequence	0-0.3 sec – CO – 3min – CO
10	Auxiliary D.C Voltage for closing & tripping coils	110 V d.c.
11	Motor charging supply	110 V d.c.
12	Auxiliary A.C. Voltage	415/240 V, 50 Hz
13	Impulse withstand voltage	95 kV peak
14	One minute power frequency withstand voltage	38 kV r.m.s.
15	Creepage distance of insulator	350 mm
16	Minimum clearance between phases	250 mm
17	Minimum clearance to earth	300 mm

NB: The Table gives parameters based on nominal environmental conditions for design below 1000m. Manufacturer shall indicate de-rating factors used to accommodate service conditions given in clause 4.1. The de-rated guaranteed values shall be filled in Annex D.

OUTDOOR CURRENT TRANSFORMER (CT) SPECIFIACATIONS

(a) Transformation ratio 100/50-1

Standard reference	IEC
Rated Voltage (KV)	11
Frequency (Hz)	50
Rated Short time current for 1 min (kA)	25
Creepage Distance	>370
Rated Continues Thermal current (A)	1, 2xIn
Number of Secondary windings	2
1st winding	
Rated primary current, In (A)	400
Rated Secondary current, (A)	1
Accuracy class	0.5
2nd winding	
Rated primary current, In (A)	400
Rated Secondary current, (A)	1
Accuracy class	5P

(2). OUTDOOR VOLTAGE TRANSFORMER (VT) SPECIFIACATIONS

(a) Transformation ratio 11000/110Vac

Standard reference	IEC
Rated Voltage (KV)	11
Frequency (Hz)	50
Thermal Burden, VA	450
Creepage Distance	>1000
Number of Secondary windings	2
Rated output, VA	50
1st winding	
Rated primary voltage, KV	11
Rated Secondary Voltage, V	110
Accuracy class	0.5
2nd winding	
Rated primary voltage, KV	11
Rated Secondary Voltage, V	110
Accuracy class	0.5

(3). 11KV SURGE DIVERTERS SPECIFICATIONS

Standard Reference	IEC
Normal system volge, KV	11
Highest system voltage, KV	12
System fault level, kA	20
Line Discharge Class	10
Lighting Impulse Residual voltage, KV	95

(4). ISOLATOR WITHOUT EARTH SWTCH

Standard Reference	IEC
Rated Voltage, KV	12
Rated Frequency, HZ	50

Rated lighting impulse withstand voltage, 1.2/50µS (KV)	95
Rated power frequency withstand voltage, Wet, 50HZ, 60secs (KV)	38
Minimum creepage distance of insulators, mm	320
Rated normal current, A	800
Rated short time withstand current for 3secs, Ka	25

(5). ISOLATOR WITH EARTH SWITCH

Standard Reference	IEC
To be fitted with Earth Switch	To provide
Rated Voltage, KV	11
Rated Frequency, HZ	50
Rated lighting impulse withstand voltage, 1.2/50µS (KV)	95
Rated power frequency withstand voltage, Wet, 50HZ, 60secs (KV)	38
Minimum creepage distance of insulators, mm	320
Rated normal current, A	800
Rated short time withstand current for 3secs, kA	25

RECTIFIER- BATTERY CHARGER

Technical specification

Input Details

Input Voltage	240VAC+-10%
Inrush Current	<15In
Power factor	0.8
Frequency range	47-63Hz

Output Details

Output Voltage range	110-125VDC
Nominal Output voltage	110VDC
Static Regulation	1%
Voltage ripple 3-phase	(Disconnected battery) <0.7%

General data

Rectifier efficiency	83%-94%
Operating temperature range	0 to 40 degrees
Storage temperature	-20 to +70 degrees Celsius
Relative humidity	<95% non-condensing at 20 degrees Celcius
Operating altitude	1000m without system duration

Cooling	Natural or fan assisted
Noise at 1m in front of the unit	1dB
Protection	Protection against battery reversed polarity
Compliance	IEC 61000-6-4

6 DRAWING AND MANUALS

6.1 Two sets of operational manuals and drawings detailing dimensions, panel layout, wiring and schematic shall be provided.

7 PACKING

7.1 The circuit breaker and associated components shall be packed in a manner as to protect it from any damage in transportation and repeated handling.

7.2 Each assembly and package of items associated with the circuit breaker shall be suitably marked.

7.3 Where an item includes a number of components to form a complete assembly, all components shall be included in one composite package which shall be firmly strapped and bound together.

8 TESTS

8.1 The manufacturer shall be responsible for performing or for having performed all the required tests specified in this specification. Tenderers shall confirm the manufacturer's capabilities in this regard when submitting tenders. Any limitation shall be clearly specified.

8.2 Tender documents shall be accompanied by copies of Type test and Routine rest reports and certificates for similar rated equipment for the purpose of tender evaluation. Type test reports and certificates shall be certified by the National Standards and Testing Authority (NSTA) of the country of origin. Where a body other than NSTA is used to certify the type-test reports, a copy of the certificate of accreditation shall be attached. Current contact information of the testing and certification Authority shall be provided. Tenderers should note that this requirement is mandatory.

8.3 Upon completion of the manufacturing process, routine tests shall be carried out as per IEC 60056. In addition to these tests, Impulse and short circuit breaking tests shall be carried out on a sample of the circuit breakers and the results endorsed by the NSTA of the country of manufacture.

8.4 Routine test reports shall be completed for each breaker and made available before the inspection by REA representatives.

8.5 All circuit breakers shall be subjected to inspection by two REA Engineers or her representative at place of manufacture and all routine tests on randomly picked breakers carried out in their presence. REA representatives shall approve shipment of the equipment if they are satisfied that the requirements of the specification are fully met. The supplier shall quote separately for this inspection. The full cost of the visit, including air tickets shall however be borne by the supplier of the equipment.

8.6 A detailed list and contract addresses of previous customers shall be submitted with the tender. The manufacturer shall indicate a monthly and annual production capacity and experience in the production of the type and size of circuit breaker he is offering. List of workshop tools and equipment shall also be appended.

9 INFORMATION

9.1 Draft design and construction drawings shall be submitted to REA before the manufacturing of breakers commence. REA undertake to submit their comments or approval for the drawings within three weeks of receiving the draft copies.

9.2 Sufficient relevant technical details and drawings shall be submitted for the purpose of Tender Evaluation. Tenders which do not meet this requirement shall be considered non-responsive.

9.3 Before manufacturing commences, REA engineers or her Agents will need to inspect the manufacturing facility at no extra cost to REA, excepting the cost of their transportation to the nearest major airport in the country. Such inspection shall not in any way prejudice the purchaser's rights and privileges throughout.

9.4 Manufacturers shall indicate any additional measure taken to mitigate electrical and mechanical stress resulting from system surges.

9.5 In filling Annex D, where it is stated specify, Tenderers shall refer to the relevant clauses in this specification. Actual dimensions and values are to be used in filling the Annex D.

ANNEX D: SUMMARY OF TECHNICAL REQUIREMENTS FOR 11kV CIRCUIT BREAKER

FORMAT FOR CLAUSE BY CLAUSE SCHEDULE

The Tenderer shall fill in the guaranteed values of the equipment supplied for the service conditions stated in all the clauses under item 4.1 in the format below. Where parameters given differ from those in the manufactures standard technical data sheet, sufficient comments shall be provided.

Clause	Requirement	Bidders Guaranteed parameter Value	Descriptive Response & Comments
1	**Scope**		
	SERVICE CONDITIONS		
4.1.1(a)	Design Altitude		
(b)	Pollution		
	Humidity		
	Temperatures		
	Isokeraunic level		
4.1.2	Connection Application		
4.2	**CONSTRUCTION**		
4.2.1	Applied standard		
4.2.2	Ganged operation		
4.2.3	Electrical operation		
4.2.4	Manual operation		
4.2.5 (a)	SF_6 mediun		
(b)	Applied standards to SF_6		
(c)	Extra gas in filling equipment		
(d)	Not trip from low SF_6 gas		
4.2.6	Creepage		
4.3	**OPERATING MECHANISM**		
4.3.1 (a)	Mounting of mechanism		
(b)	Protection degree		
(c)	Housing padlock		
4.3.2	Trip free		
4.3.3 (a)	Spring charging motor		
(b)	Control voltage		
4.3.4	Five NC and NO contacts		
4.3.5	20 spare terminals		
(a)	CT terminals		
(b)	VT terminals		
4.3.6	Local remote selector switch		
4.3.7 (a)	Closing block due to SF_6 low		
(b)	SF_6 relaying contacts		
(c)	SF_6 relaying contacts		
4.3.8	Local close/open switch		
4.3.9	Mechanical indications		
4.3.10	Terminals		
4.3.11	Anti-pumping		
4.3.12	Interlocking		

5	**RATING**		
	Altitude at which tests are conducted and adjustments for clause under 4.1		
	Nominal Voltage		
	Highest Voltage		
	Frequency		
	Normal Current		
	Rated short circuit Current		
	Duration of short circuit		
	First pole to clear factor		
	Transient recovery voltage peak value		
	Operating sequence		
	Auxiliary D.C Voltage for closing & tripping coils		
	Motor charging supply		
	Auxiliary A.C. Voltage		
	Impulse withstand voltage		
	One minute power frequency withstand voltage		
	Creepage distance of insulator		
	Minimum clearance between phases 432 mm		
	Minimum clearance to earth		
6	**DRAWING**		
	Submit drawings		
7	**PACKING**		
7.1	State		
7.2	State		
7.3	State		
8	**TESTS**		
8.1	State		
8.2	Provide		
8.3	State Compliance		
8.4	State		
8.5	Provide		
8.6	Provide		
9	**INFORMATION**		
9.1	Provide		
9.2	Provide		
9.3	State		

PART III - THE CONDITIONS OF CONTRACT AND CONTRACT

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

[Name of Procuring Entity]

[Name of Contract]

[Architect Name and Address]

General Conditions of Contract

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1. GENERALPROVISIONS

1.1 Definitions

In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated below. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

"Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

"Base Date" means a date 30 day prior to the submission of tenders.

"Bill of Quantities" means the priced and completed Bill of Quantities forming part of the tender.

"Completion Date" meansthedateofcompletionoftheWorksascertifiedbytheEngineer.

"Contract Price" means the price defined in the contract and there after as adjusted in accordance with the provisions of the Contract.

"Contract" means the agreement entered into between the Procuring Entity and the Contractor as recorded in the Agreement Form and signed by the parties including all attachments and appendices thereto and all documents incorporated by reference therein to execute, complete, and maintain the Works.

"Contractor's Documents" means the calculations, computer programs and other software, progress reports, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

"Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Procuring Entity's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

"Contractor'sPersonnel" means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labor and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

"Contractor's Representative" means the person named by the Contractor in the Contractor appointed from time to timeby the Contractor who acts on behalf of the Contractor.

"Contractor" means the person(s) named as contractor in the Form of Tender accepted by the Procuring Entity.

"Cost" means expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

"Day" means a calendar day and **"year"** means 365 days.

"Dayworks" means Work inputs subject to payment on a time basis for labour and the associated materials and plant.

"Defect" means any part of the Works not completed in accordance with the Contract.

"Defects Liability Certificate" means the certificate issued by Architect upon correction of defects by the Contractor.

"Defects Liability Period" means the period named in the Special Conditions of Contract and calculated from the Completion Date, within which the contractor is liable for any defects that may develop in the handed over works.

"Defects Notification Period" means the period for notifying defects in the Works oraSection(asthecasemaybe) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], whichextendsoverthedaysstated intheSpecialConditionsofContract.

"Drawings" means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract.

"Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

"Final Statement" means the statement defined in Sub-Clause 14.11 [ApplicationforFinalPaymentCertificate].

"Force Majeure" is defined in Clause19 [Force Majeure].

"Foreign Currency" means a currency of another country (not Kenya) in which part (or all) of the Contract Price is payable, but not the Local Currency.

"Goods" means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

"Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

"Laws" means all national legislation, statutes, ordinances, and regulations and by-laws of any legally constituted public authority.

"Letter of Acceptance" means the letter of formal acceptance of a tender, signed by Procuring Entity, including any annexed memoranda comprising agreements between and signed by both Parties.

"Local Currency" means the currency of Kenya.

"Materials" means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

"Notice of Dissatisfaction" means the notice given by either Party to the other under Sub-Clause 20.3 indicating its dissatisfaction and intention to commence arbitration.

"Special Conditions of Contract" means the pages completed by the Procuring Entity entitled Special Conditions of Contract which constitute Part A of the Special Conditions.

"Party" means the Procuring Entity or the Contractor, as the context requires.

"Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].

"Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].

"Performance Security" means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].

"Permanent Works" means the permanent works to be executed by the Contractor under the Contract.

"Plant" means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction or operation of the Works.

"Procuring Entity's Equipment" means the apparatus, machinery and vehicles (if any) made available by the

Procuring Entity for the use of the Contract or in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Procuring Entity.

"Procuring Entity's Personnel" means the Engineer, the Engineer, the assistants and all other staff, labor and other employees of the Architect and of the Procuring Entity; and any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as Procuring Entity's Personnel.

"Procuring Entity" means the Entity named in the Special Conditions of Contract.

"Engineer" is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and administering the Contract and shall be an "Architect" or a "Quantity Surveyor" registered under the Architects and Quantity Surveyors Act Cap 525 or an "Engineer" registered under Engineers Registration Act Cap 530.

"Engineer" means the person appointed by the Procuring Entity to act as the Architect for the purposes of the Contract and named in the Special Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor

"Provisional Sum" means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

"Retention Money" means the accumulated retention moneys which the Procuring Entity retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].

"Schedules" means the document(s) entitled schedules, completed by the Contractor and submitted with the Form of Tender, as included in the Contract.

"Section" means a part of the Works specified in the Special Conditions of Contract as a Section (if any)

"Site Investigation Reports" are those reports that may be included in the tendering documents which a ref actual and interpretative about the surface and sub-surface condition sat the Site.

"Site" means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.

"Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

"Start Date" or "Commencement Date"is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).

"Statement" means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

"Subcontractor" means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works.

"Taking-Over Certificate" means a certificate issued under Clause 10 [Procuring Entity's Taking Over].

"Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

"Temporary works" means works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

"Tender" means the Form of Tender and all other documents which the Contractor submitted with the Form of Tender, as included in the Contract.

"Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in

accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Testson Completion" means the tests which are specified in the Contractor agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Time for Completion" means the time for completing the Works or a Section (as the case may be) as stated in the Special Conditions of Contract (with any extension calculated from the Commencement Date.

"Unforeseeable" means not reasonably foreseeable by an experienced contractor by the Base Date.

"Variation" means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].

"Works" means the items the Procuring Entity requires the Contractor to undertake as defined in the Appendix to Conditions of Contract. **"Works" may** also mean the Permanent Works and the Temporary Works, or either of them as appropriate.

Interpretation

In the Contract, except where the context requires otherwise:

a) Words indicating one gender include all genders;
b) words indicating the singular also include the plural and words indicating the plural also include the singular;
c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;
d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

Communications

1.3.1 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Special Conditions of Contract; and
b) delivered, sentor transmitted to the addressf or the recipient's communications as stated in the Special Conditions of Contract. However:

i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the addressfromwhichtherequestwasissued.

1.3.2 Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Architect or the other Party, as the case may be.

Law and Language

1.3.3 The Contract shall be governed by the laws of **Kenya.**

1.3.4 The ruling language ofthe Contract shall be **English.**

Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) The Contract Agreement,
b) The Letter of Acceptance,
c) The Special Conditions – Part A,
d) the Special Conditions – Part B
e) the General Conditions of Contract
f) the Form of Tender,
g) the Specifications and Bills of Quantities
h) the Drawings, and
i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Architect shall issue any necessary clarification or instruction.

Contract Agreement

The Parties shall enter into a Contract Agreement within 14 days after the Contractor receives the Contract Agreement, unless the Special Conditions establish otherwise. The Contract Agreement shall be based upon the formannexed to the Special Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Procuring Entity.

Assignment

The Contractor shall not assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, the contractor:

a) May as sign the whole or any part with the prior consent of the Procuring Entity, and
b) may, as security in favor of a bank or financial institution, assign its right to moneys due, or to become due, under the Contract.

Care and Supply of Documents

1.3.5 The Specifications and Drawings shall be in the custody and care of the Procuring Entity.Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawings and Bills of Quantities shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.

1.3.6 Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over bythe Procuring Entity. Unless otherwise stated in the Contract, the Contractor shall supply to the Architect two copies of each of the Contractor's Documents.

1.3.7 The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract.The Procuring Entity's Personnel shall have the right of access to all these documents at all reasonable times.

1.3.8 If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, theParty shall promptly give notice to the other Party of such error or defect.

Timely provision of Drawings or Instructions

1.3.9 The Contractor shall give notice to the Architect whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.

1.3.10 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Architect to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any other associated costs accrued, which shall be included in the Contract Price.

1.3.11 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

1.3.12 However, if and to the extent that the Architect failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, or costs accrued.

Procuring Entity's Use of Contractor's Documents

1.3.13 Asagreed between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

1.3.14 The Contractor shall be deemed (by signing the Contract) to give to the Procuring Entity a non-terminable transferable non-exclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:

a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

1.3.15 The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Procuring Entityf or purposes other than those permitted under Sub-Clause 1.10.2.

1.4 Contractor's Use of Procuring Entity's Documents

As agreed between the Parties, the Procuring Entity shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Procuring Entity. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Procuring Entity's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.5 Confidential Details

1.5.1 The Contractor's and the Procuring Entity's Personnel shall ensure confidentiality at all times. The confidentiality shall survive termination or completion of the contract. They shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.

1.5.2 The Contractor's and the Procuring Entity's Personnel shall also treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

1.6 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:

a) The Procuring Entity shall have obtained (or shall obtain) the planning, zoning, building permitor similar permission for the Permanent Works, and any other permissions described in the Specifications as having been (or to be) obtained by the Procuring Entity; and the Procuring Entity shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and

b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Procuring Entity harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.

1.7 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

a) These persons shall be deemed to be jointly and severally liable to the Procuring Entity for the performance of the Contract;
b) these persons shall notify the Procuring Entity of their leader who shall have authority to bind the Contractor and each of these persons; and
c) the Contractor shall not alter its composition or legal status without the prior consent of the Procuring Entity.

1.8 Inspections and Audit by the Procuring Entity

Pursuant to paragraph 2.2(e). of Appendix B to the General Conditions, the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Public Procurement Regulatory Authority, Procuring Entity and/or persons appointed or designated by the Government of Kenya to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Procuring Entity if requested by the Procuring Entity. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 15.6 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise ofthe Procuring Entity's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of in eligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2 THE PROCURING ENTITY

2.1 Right of Access to the Site

2.1.1 The Procuring Entity shall give the Contractor right of access to, and possession of, all parts of the Site within thetime (or times) stated in the **Special Conditions of Contract.** The right and possession may not be exclusive to the Contractor. If, under the Contract, the Procuring Entity is required to give (to the Contractor) possession ofanyfoundation, structure, plant or means of access, the Procuring Entity shall do so in the time and manner stated in the Specification. However, the Procuring Entity may withhold any such right or possession until the Performance Security has been received.

2.1.2 If no such time is stated in the Special Conditions of Contract, the Procuring Entity shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

2.1.3 If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Procuring Entity to give any such right or possession within such time, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

2.1.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

2.1.5 However, if and to the extent that the Procuring Entity's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

2.2 Permits, Licenses or Approvals

2.2.1 The Procuring Entity shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:

a) Copies of the Laws of Kenya which are relevant to the Contract but are not readily available, and
b) any permits, licenses or approvals required by the Laws of Kenya:

i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
ii) for the delivery of Goods, including clearance through customs, and
iii) for the export of Contractor's Equipment when it is removed from the Site.

2.3 Procuring Entity'sPersonnel

The Procuring Entity shall be responsible for ensuring that the Procuring Entity's Personnel and the Procuring Entity's other contractor son the Site:

a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and

b) take action ssimilar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) ofSub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

2.4 Procuring Entity's Financial Arrangements

The Procuring Entity shall make and maintain all necessary financial arrangements which will enable the Procuring Entity to pay the Contract Price punctually (as estimated at that time) in accordance with Clause14 [Contract Price and Payment].

3. THE ENGINEER

3.1 Architect Duties and Authority

3.1.1 The Procuring Entity shall appoint the Architect who shall carry out the duties as signed to him in the Contract. The Architect staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Architect Name and Address shall be provided in the **Special Conditions of Contract.**

3.1.2 The Architect shall have no authority to amend the Contract.

3.1.3 The Architect May exercise the authority attributable to the Architect as specified in or necessarily to be implied from the Contract. If the Architectis required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the S**pecial Conditions of Contract**. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Engineer.

3.1.4 However, whenever the Architect exercises a specified authority for which the Procuring Entity's approvalis required, then (for the purposes of the Contract) the contractor shall require the Architect toprovideevidence of such approval before complying with the instruction.

3.1.5 Except as otherwise stated in these Conditions:

a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Architect shallbedeemedtoactfortheProcuring Entity;
b) the Architect has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;
c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Architect (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and
d) anyact by the Architect in response to a Contractor's request shall be notified in writing to the Contractor within 14 days of receipt.

3.1.6 The following provisions shall apply:

The Architect shall obtain the specific approval of the Procuring Entity before taking action under the-following Sub-Clauses of these Conditions:

a) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost.

b) Sub-Clause 13.1: instructing a Variation, except;

i) In an emergency situation as determined by the Engineer, or

ii) If such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the **Special Conditions of Contract.**

c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.

d) Sub-Clause13.4: Specifying the amount payable in each of the applicable three currencies.

3.1.7 Not withstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forth with comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Engineer. The Architect shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.

3.2 Delegation by the Engineer

3.2.1 The Architect may from time to time assign duties and delegate authority to assistants and may also revoke such assignment or delegation. These assistants may include a resident Engineer, and/or independent inspectors appointed to inspect and/ or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Architect shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

3.2.2 Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

a) Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Architect to reject the work, Plant or Materials;

b) If the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

3.3 Instructions of the Engineer

3.3.1 The Architect may issue to the Contractor (at anytime) instructions and additional or modified Drawings which may benecessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under Clause 3.2.1.

3.3.2 The Contractor shall comply with the instructions given by the Architect or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Architec tor a delegated assistant:

a) Gives an oral instruction,

b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and

c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,

Then the confirmation shall constitute the written instruction of the Architect or delegated assistant (as the case may be).

3.4 Replacement of the Engineer

IftheProcuring Entity intends to replace the Engineer, the Procuring Entity shall, in not less than 21 days before theintendeddateofreplacement, give notice to the Contractor of the name, address and relevant experience of the intended person to replace the Engineer.

3.5 Determinations

3.5.1 Whenever these Conditions provide that the Architect shall proceed in accordance with this Sub-Clause3.5 to agreeor determine any matter, the Architect shall consult with each Party in an endeavor to reach agreement. If agreement is not achieved, the Architect shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

3.5.1 The Architect shall give notice to both Parties of each agree mentor determination, with supporting particulars, within 30 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].

4 THE CONTRACTOR

4.1 Contractor's General Obligations

4.1.1 The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Architect instructions, ands hall remedy any defects in the Works.

4.1.2 The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

4.1.3 All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country.

4.1.4 The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the designor specification of the Permanent Works.

4.1.5 The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

4.1.6 If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions:

a) The Contractor shall submit to the Architect the Contractor's Documents for this part in accordance with the procedures specified in the Contract;

b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Architect to add to the Drawings for co-ordination of each Party's designs;

c) the Contractor shall be responsible for this part and it shall, when the Works are completed, befit for such purposes for which the part is intended as are specified in the Contract; and

d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Architectthe "as-built" documents and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Procuring Entity to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

4.2 Performance Security

4.2.1 The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the **Special Conditions of Contract** and denominated in the currency (ies) of the Contract or in a freely convertible currency acceptable to the Procuring Entity. If an amount is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

4.2.2 The Contractor shall deliver the Performance Security to the Procuring Entity within 30 days after receiving the Notification of Award and shall send a copy to the Engineer. The Performance Security shall be issued by a reputable bank selected by the Contractor and shall be in the form annexed to the Special Conditions, as stipulated by the Procuring Entity in the Special Conditions of Contract, or in another form approved by the Procuring Entity.

4.2.3 The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executedand completed the Works and remedied any defects. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security until the Works have been completed and any defects have been remedied.

4.2.4 The Procuring Entity shall not make a claim under the Performance Security, except for amounts to which the Procuring Entity is entitled under the Contract.

4.2.5 The Procuring Entity shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Procuring Entity was not entitled to make the claim.

4.2.6 The Procuring Entity shall return the Performance Security to the Contractor within 14 days after receiving a copyof the Taking-Over Certificate.

4.2.7 Without limitation to the provisions of the rest of this Sub-Clause, whenever the Architect determines an addition or a reduction to the Contract Price as a result of a change in cost and/ or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Architect request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

4.3 Contractor's Representative

4.3.1 The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor's Representative's Name and Address shall be provided in the **Special Conditions of Contract.**

4.3.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Architect for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is with held or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of an other suitable person for such appointment.

4.3.3 The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint are placement.

4.3.4 The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Architect prior consent, and the Architect shall be notified accordingly.

4.3.5 The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

4.3.6 The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Architect has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

4.3.7 The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause1.4

[Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreter savailable during all working hours in a number deemed sufficient by the Engineer.

4.4 Sub-contractors

4.4.1 The Contractor shall not subcontract the whole of the Works. The contractor may however subcontract the works as provided in Clause 34.2.

4.4.2 The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if theyweret heacts or defaults of the Contractor. Unless otherwise stated in the Special Conditions:

a) The Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract;
b) The prior consent of the Procuring Entity shall be obtained to other proposed Subcontractors;
c) the Contractor shall give the Procuring Entity not less than 14 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and
d) each subcontract shall include provisions which would entitle the Procuring Entity to require the subcontract to be assigned to the Procuring Entity under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity].

4.4.3 The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

4.4.4 Wher epracticable, the Contractor shall give fair and reasonable opportunity for contractors from Kenya to be appointed as Subcontractors.

4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Procuring Entity, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Procuring Entity for the work carried out by the Subcontractor after the assignment takes effect.

4.6 Co-operation

4.6.1 The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

a) The Procuring Entity's Personnel,
b) Any other contractors employed by the Procuring Entity, and
c) The personnel of any legally constituted public authorities, who may be employed in the execution on or near the Site of any work not included in the Contract.

4.6.2 Any such instruction shall constitute a Variation if and to the extent that it cause sthe Contractor to suffer delays and/ortoincur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

4.6.3 If, under the Contract, the Procuring Entity is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Architect in the time and manner stated in the Specification.

4.7 Setting Out of the Works

4.7.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contractor notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

4.7.2 The Procuring Entity shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.

4.7.3 If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an errorin these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/ or Cost, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such costs accrued, which shall be included in the Contract Price.

4.7.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to thise.

4.8 Safety Procedures

The Contractor shall:
a) Comply with all applicable safety regulations,
b) Takec are for the safety of all persons entitled to be on the Site,
c) Use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Procuring Entity's Taking Over], and
e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

4.9 Quality Assurance

4.9.1 The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract.The system shall be in accordance with the details stated in the Contract. The Architect shall be entitledto audit any aspect of the system.

4.9.2 Details of all procedures and compliance documents shall be submitted to the Architectf or information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor itself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

4.10 Site Data

4.10.1 The Procuring Entity shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Procuring Entity's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Procuring Entity shall similarly make available to the Contractor all such data which come into the Procuring Entity's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

4.10.2 To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

a) The form and nature of the Site, including sub-surface conditions,
b) the hydrological and climatic conditions,
c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
d) the Laws, procedures and labour practices of Kenya, and
e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

4.11 Sufficiency of the Accepted Contract Amount

4.11.1 TheContractor shall be deemed to:

a) Have satisfied itself as to the correctness and sufficiency of the Accepted Contract Amount, and

b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

4.11.2 Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

4.12 Unforeseeable Physical Conditions

4.12.1 In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

4.12.2 If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Architect as soon as practicable.

4.12.3 This notice shal ldescribe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

4.12.4 If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost, which shall be included in the Contract Price.

4.12.5 Upon receiving such notice and inspecting and/or investigating these physical conditions, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

4.12.6 However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Architect may also review whether other physical conditions in similar parts of the Works (if any) were more favorable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favorable conditions were encountered, the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

4.12.7 The Architect shall take account of any evidence of the physical conditions foreseen by the Contractorwhen submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor'sinterpretationofanysuchevidence.

4.13 Rights of Way and Facilities

Unless otherwise specified in the Contract the Procuring Entity shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities out side the Site

which he may require for the purposes of the Works.

4.14 Avoidance of Interference

4.14.1 The Contractor shall not interfere unnecessarily or improperly with:

a) The convenience of the public, or

b) The access to and use and occupation of all roads and foot paths, irrespective of whether they are public or in the possession of the Procuring Entity or of others.

4.14.2 The Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

4.15 Access Route

4.15.1 The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.

4.15.2 Except as otherwise stated in these Conditions:

a) The Contractor shall (as be tween the Parties) be responsible for any maintenance which may be required for his use of access routes;

b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;

c) the Procuring Entity shall not be responsible for any claims which may arise from the use or otherwise of any access route;

d) the Procuring Entity does not guarantee the suitability or a vailability of particular access routes; and

e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions:

a) the Contractor shall give the Architect not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;

b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and

c) the Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from thetransport of Goods and shall negotiate and pay all claims arising from their transport.

4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractor's Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

4.18 Protection of the Environment

4.18.1 The contractor shall comply with the applicable environmental laws, regulations and policies.

4.18.2 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

4.18.3 The Contractors hall ensure that emissions, surfaced is charges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

4.19 Electricity, Water and Gas

4.19.1 The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require for his construction activities and to the extent defined in the Specifications, for the tests.

4.19.2 The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specifications.The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.

4.19.3 The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20 Procuring Entity's Equipment and Free-Issue Materials

4.20.1 The Procuring Entity shall make the Procuring Entity's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:

a) The Procuring Entitys hall be responsible for the Procuring Entity's Equipment, except that

b) the Contractor shall be responsible for each item of Procuring Entity's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.

4.20.1 The appropriate quantities and the amounts due (at such stated prices) for the use of Procuring Entity's Equipment shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20.2 The Procuring Entity shall supply, free of charge, the “free-issue materials” (if any) in accordance with the details stated in the Specification. The Procuring Entity shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them and shall promptly give notice to the Architect of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defector default.

4.20.3 After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Procuring Entity of liability for any shortage, defect or default not apparent from a visual inspection.

4.21 Progress Reports

4.21.1 Unless otherwise stated in the Special Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Architect in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

4.21.2 Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works. Each report shall include:

a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [NominatedSubcontractors]),

b) photographs showing the status of manufacture and of progress on the Site;

c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:

   i) commencement of manufacture,

   ii) Contractor's inspections,

   iii) tests, and

iv) shipment and arrival at the Site;

d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];

e) copies of quality assurance documents, test results and certificates of Materials;

f) list of notices given under Sub-Clause 2.5 [Procuring Entity's Claims] and notices given under Sub- Clause 20.1 [Contractor's Claims];

g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and

h) comparison so factual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

4.22 Security of the Site

Unless otherwise stated in the Special Conditions:

a) The Contractor shall be responsible for keeping unauthorized persons off the Site, and

b) authorized persons shall be limited to the Contractor's Personnel and the Procuring Entity's Personnel; and to any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as authorized personnel of the Procuring Entity's other contractors on the Site.

4.23 Contractor's Operations on Site

4.23.1 The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Architect as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacentl and.

4.23.2 During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.

4.23.3 Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.

4.24 Fossils

4.24.1 All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Procuring Entity. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

4.24.2 The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost, which shall be included in the Contract Price.
After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

5. NOMINATED SUBCONTRACTORS

5.1 Definition of "nominated Subcontractor"

In this Contract, "nominated Subcontractor" means a Subcontractor:

a) Who is nominated by the Procuring Entity, or

b) Contractor has nominated as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Procuring Entity as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Procuring Entity agrees in writing to indemnify the Contractor against and from the consequences of the matter:

a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;

b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or

c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:

   i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge hisobligations and liabilities under the Contract;

   ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities, and

   iii) be paid only if and when the Contractor has received from the Procuring Entity payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Architect certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

5.4 Evidence of Payments

5.4.1 Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Architect may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

(a) Submits this reasonable evidence to the Engineer, or

(b) i) Satisfies the Architect in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and

   ii) Submits to the Architect reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement, then the Procuring Entity may (at his sole discretion) pay, directto the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above.The Contractor shall then repay, to the Procuring Entity, the amount which the nominated Subcontractor was directly paid by the Procuring Entity.

6. STAFF AND LABOR

6.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within Kenya.

6.2 Rates of Wages and Conditions of Labor

6.2.1 The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Procuring Entity's whose trade or industry is similar

to that of theContractor.

6.2.2 The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in Kenya in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of Kenya for the time being in force, and the Contractor shall perform such duties in regard to such deductions there of as may be imposed on him by such Laws.

6.3 Persons in the Service of Procuring Entity

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Procuring Entity's Personnel.

6.4 Lab or Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, employment of children, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights. The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

6.5 Working Hours

Nowork shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:

a) Otherwise stated in the Contract,
b) The Architect gives consent, or
c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, provided that work done outside the normal working hours shall be considered and paid for as overtime.

6.6 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities on site for the Contractor's Personnel. The Contractor shall also provide facilities for the Procuring Entity's Personnel as stated in the Specifications. The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

6.7 Health and Safety

6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with loca lhealth authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Procuring Entity's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

6.7.2 The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide what ever is required by this person to exercise this responsibility and authority.

6.7.3 The Contractor shall send, to the Engineer, details of any accident as soon as practicable after itsoccurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Architect may reasonably require.

6.7.4 The Contractor shall conduct an awareness programme on HIV and other sexually transmitted diseases via an approved service provider and shall undertake such other measures taken to reduce the risk of the transfer of these diseases between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

6.8 Contractor's Superintendence

6.8.1 Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary super intendence to plan, arrange, direct, manage, inspect and test the work.

6.8.2 Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

6.9 Contractor's Personnel

6.9.1 The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Contractors Key personnel shall be named in the Special Conditions of Contract. The Architect may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

a) Persists in any misconduct or lack of care,
b) Carries out duties in competently or negligently,
c) fails to conform with any provisions of the Contract,
d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or
e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution ofthe Works.

6.9.2 If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

6.12 Foreign Personnel

6.12.1 The Contractor shall not employ foreign personnel unless the contractor demonstrates that there are no Kenyans with the required skills.

6.12.2 The Contractor shall be responsible for the return of any foreign personnel to the place where they were recruited or to their domicile. In the event of the death in Kenya of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

6.13 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Sitea n adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.14 Measures against Insect and Pest Nuisance

The Contractor shall a tall times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

6.15 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, onsite, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal there of by Contractor's Personnel.

6.16 Prohibition of Forced or Compulsory Labour

The Contractor shall not employ forced labor, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of

involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

6.17 Prohibition of Harmful Child Labor

The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of Kenya have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

6.18 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

6.19 Workers' Organizations

The Contractor shall comply with the relevant labor laws that recognize workers' rights to form and to join workers' organizations of their choosing without interference.

6.20 Non-Discrimination and Equal Opportunity

The Contractor shall base the labour employment on the principle of equal opportunity and fair treatment and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employ mentor retirement, and discipline.

7. PLANT, MATERIALS AND WORKMANSHIP

7.1 Manner of Execution

The Contractor shall carry out the manufacture/assemble of plant, the production and manufacture of Materials, and all other execution of the Works:

a) In the manner (if any) specified in the Contract,

b) in a proper workman like and careful manner, in accordance with recognized good practice, and

c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Architect for consent prior to using the Material sin or for the Works:

a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and

b) additional samples instructed by the Architect as a Variation.

Each sample shall be labeled as to origin and intended use in the Works.

7.3 Inspection

7.3.1 The Procuring Entity's Personnel shall at all reasonable times:

a) Have full access to all parts of the Site and to all places from which natural Materials are being obtained, and

b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

7.3.2 The Contractor shall give the Procuring Entity's Personnel full opportunity to carry out these activities,

including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

7.3.3 The Contractor shall give notice to the Architect whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Architect shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Architect does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and there after reinstate and make good, all at the Contractor's cost.

7.4 Testing

7.4.1 This Sub-Clause shall apply to all tests specified in the Contract.

7.4.2 Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labor, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and placef ort he specified testing of any Plant, Materials and other parts of the Works.

7.4.3 The Architect may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, not withstanding other provisions of the Contract.

7.4.4 The Architect shall give the Contractor not less than 24 hours' notice of the Architect intention to attend the tests. If the Architect does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Architect presence.

7.4.5 If the Contractor suffers delay and/ or incurs Cost from complying with these instructions or as a result of a delay for which the Procuring Entity is responsible, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

7.4.6 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

7.4.7 The Contractor shall promptly forward to the Architect duly certified reports of the tests. When thespecified tests have be enpassed, the Architect shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Architect has not attended the tests, he shall be deemed to have accepted the readings as accurate.

7.5 Rejection

7.5.1 If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Architect may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

7.5.2 If the Architect requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Procuring Entity to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity.

7.6 Remedial Work

7.6.1 Not withstanding any previous test or certification, the Architect may instruct the Contractorto:

a) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
b) remove and re-execute any other work which is not in accordance with the Contract, and
c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseen able event or otherwise.

7.6.2 The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

7.6.3 If the Contractor fails to comply with the instruction, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity all costs arising from this failure.

7.6.4 If the contractor repeatedly delivers defective work, the Procuring Entity may consider termination in accordance with Clause 15.

7.7 Ownership of Plant and Materials

Except as otherwise provided in the Contract, each item of Plant and Materials shall become the property of the Procuring Entity at whichever is the earlier of the following times, free from liens and other encumbrances:

a) When it is in corporated in the Works;

b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

7.8 Royalties

Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

a) Natural materials obtained from outside the Site, and

b) thedisposal of material from demolitions and excavations and of other surplus material (whether natural orman-made), except to the extent that disposal are as within the Site are specified in the Contract.

8. COMMENCEMENT, DELAYS AND SUSPENSION

8.1 Commencement of Works

8.1.1 Except as otherwise specified in the Special Conditions of Contract, the Commencement Date shall be the date at which the following precedent condition shave all been fulfilled and the Architect notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;

b) except if otherwise specified in the Special Conditions of Contract, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.

c) Receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

8.1.2 If the said Architect instruction is not received by the Contractor within 180 days from his receipt of the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause1 6.2 [Terminationby Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shal lthen proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

a) Achieving the passing of the Testson Completion, and

b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

8.3 Programme

8.3.1 The Contractor shall submit a detailed time programme to the Architect within1 4 days after receiving the

notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,

b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

c) the sequence and timing of inspections and tests specified in the Contract, and

d) a supporting report which includes:

   i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and

   ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

8.3.2 Unless the Engineer, within 14 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Procuring Entity's Personnel shall be entitled to rely upon the programme when planning their activities.

8.3.3 The Contractor shall promptly give notice to the Architect of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works.

8.3.4 If, at anytime, the Architect gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contractor to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Architect in accordance with this Sub-Clause.

8.4 Extension of Time for Completion

8.4.1 The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:

a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,

b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,

c) exceptionally adverse climatic conditions,

d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or

e) any delay, impediment or prevention caused by or attributable to the Procuring Entity, the Procuring Entity's Personnel, or the Procuring Entity's other contractors.

8.4.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Architect in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Architec tshall review previous determinations and may increase, but shall not decrease, the total extension of time.

8.5 Delays Caused by Authorities

If the following conditions apply, namely:

a) The Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in Kenya,

b) These authorities delay or disrupt the Contractor's work, and

c) the delay or disruption was Unforeseeable, then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

8.6 Rate of Progress

8.6.1 If, at anytime:

a) Actual progress is too slow to complete within the Time for Completion, and/or

b) Progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme], other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Architect may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

8.6.2 Unless the Architect notifies otherwise, the Contractor shall adopt these revised methods, which mayrequire increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Procuring Entity to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity, in addition to delay damages (if any) under Sub-Clause 8.7 below.

8.6.3 Additional costs of revised methods including acceleration measures, instructed by the Architect to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Procuring Entity, without generating, however, any other additional payment benefit to the Contractor.

8.7 Delay Damages

8.7.1 If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay delay damages to the Procuring Entity for this default. These delay damages shall be the sum stated in the **Special Conditions of Contract**, which shall be paid for everyday which shall elapse between the relevant Time for Completion and the date stated in the taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Special Conditions of Contract.

8.7.2 These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

8.8.1 The Architect may at anytime instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works a gainst any deterioration, loss or damage.

8.8.2 The Architect may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

8.9.1 If the Contractor suffers delay and/or incurs Cost from complying with the Architect instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) Payment of any such Cost, which shall be included in the Contract Price.

8.9.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause3.5 [Determinations] to agree or determine these matters.

8.9.3 The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/ or

Materials which have not been delivered to Site, if:

a) The work on Plant or delivery of Plant and/ or Materials has been suspended for more than 30 days, and

b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Architect instructions.

8.11 ProlongedSuspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receivingf rom the Architec tan instruction to this effect under Clause 13 [Variations and Adjustments].

9. TESTS ON COMPLETION

9.1 Contractor's Obligations

9.1.1 The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].

9.1.2 The Contractor shall give to the Architect not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Architect shall instruct.

9.1.3 In considering the results of the Tests on Completion, the Architect shall make allowances for the effect of any use of the Works by the Procuring Entity on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the resultsof these Tests to the Engineer.

9.2 Delayed Tests

9.2.1 If the Tests on Completion are being unduly delayed by the Procuring Entity, Sub-Clause 7.4 [Testing] (fifth paragraph) and/ or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

9.2.2 If the Tests on Completion are being unduly delayed by the Contractor, the Architect may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Testson such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

9.2.3 If the Contractor fails to carryout the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test sat the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted asaccurate.

9.3 Retesting of related works

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Architect or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

9.4.1 If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Architect shall be entitled to:

a) Order further repetition of Tests on Completion under Sub-Clause 9.3; or

b) if the failure deprives the Procuring Entity of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Procuring Entity shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause1 1.4 [Failure to Remedy Defects].

10. PROCURING ENTITY'S TAKING OVER

10.1 Taking Over of the Works and Sections

10.1.1 Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Procuring Entity when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

10.1.2 The Contractor may apply by notice to the Architect for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contract or may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Architect shall, within 30 days after receiving the Contractor's application:

a) Issue the Taking-Over Certificate to the Contract or, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor out standing work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or

b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice undert his Sub-Clause.

10.1.4 If the Architect fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on thel ast day of that period.

10.2 Taking Over of Parts of the Works

10.2.1 The Architect may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.

10.2.2 The Procuring Entity shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Architect has issued a Taking-Over Certificate for this part. However, if the Procuring Entity does use any part of the Works before the Taking-Over Certificate is issued:

a) The part which is used shall be deemed to have been taken over as from the date on which it is used,

b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Procuring Entity, and

c) if requested by the Contractor, the Architect shall issue a Taking-Over Certificate for this part.

10.2.3 After the Architect has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

10.2.4 If the Contractor incurs Cost as a result of the Procuring Entity taking over and/or using a part of the Works, other than such use as is specified in the Contractor agreed by the Contractor, the Contractor shall (i) give notice to the Architect and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such accrued costs, which shall be included in the Contract Price. After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.

10.2.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages there after for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply

to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages] and shall not affect the maximum amount of these damages.

10.3 Interference with Tests on Completion

10.3.1 If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Procuring Entity is responsible, the Procuring Entity shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

10.3.2 The Architect shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Architect shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

10.3.3 If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such accrued costs, which shall be included in the Contract Price.

10.3.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

11. DEFECTS LIABILITY

11.1 Completion of Outstanding Work and Remedying Defects

11.1.1 In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fairwear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable there after, the Contractor shall:

a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and

b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the Engineer.

11.2 Cost of Remedying Defects

11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

a) Any design for which the Contractor is responsible,

b) Plant, Materials or workmanship not being in accordance with the Contract, or

c) Failure by the Contractor to comply with any other obligation.

11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they

are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not appl yto any defectsor damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

11.4.1 If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by the Engineer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

11.4.2 If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2[Costo f Remedying Defects], the Procuring Entity may (at his option):

(a) Carry out the work itself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity the costs reasonably incurred by the Procuring Entity in remedying the defect or damage;

(b) Requirethe Architect to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or

(c) if the defect or damage deprives the Procuring Entity of substantially the whole benefit of the Works or any major part of the Works, terminate the Contractas a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contractor otherwise, the Procuring Entity shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

11.5 Removal of Defective Work

If the defector damage cannot be remedied expeditiously on the Site and the Procuring Entity gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

11.6 Further Tests

11.6.1 If the work of remedying of any defector damage may affect the performance of the Works, the Architect may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 14 days after the defect or damage is remedied.

11.6.2 These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Unti lthe Completion Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Procuring Entity's reasonable security restrictions.

11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defecton parts of the works that have already accepted, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Architect in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

11.9 Completion Certificate

11.9.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Architect has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed

his obligations under the Contract.

11.9.2 The Architect shall issue the Completion Certificate within 30days after the latest of the expiry dates of the Defects Liability Period, or as soon there after as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Completionn Certificate shall be issued to the Procuring Entity.

11.9.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Completion Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

11.11.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

11.11.2 If all these items have not been removed within 30 days after receipt by the Contractor of the Completion Certificate, the Procuring Entity may sell or otherwise dispose of any remaining items. The Procuring Entity shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

11.11.3 Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Procuring Entity's costs, the Contractor shall pay the outstanding balance to the Procuring Entity.

12. MEASUREMENT AN DEVALUATION

12.1 Works to be Measured

12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractorshall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
b) supply any particulars requested by the Engineer.

12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.

12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agreet her ecords with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

12.1.5 If the Contractor examines and disagrees the records, and/ or does not sign them as agreed, then the Contractor shall give notice to the Architect of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Architect shall review the records and either confirm or vary them and certify the paymentofthe undisputed part. If the Contractor does not so give notice to the Architect within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract:

a) Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

12.3.1 Except as otherwise stated in the Contract, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of workd one by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

12.3.2 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.

12.3.3 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

a) The work is instructed under Clause13 [Variations and Adjustments],

b) no rate or price is specified in the Contract for this item, and

c) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

12.3.5 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price– tender price)/ tender price X 100*.

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

a) The Contractor will incur (or has incurred) cost which, if the work had not been omitted, wouldhavebeen deemed to be covered by a sum forming part of the Accepted Contract Amount;

b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13. VARIATIONS AND ADJUSTMENTS

13.1 Right to Vary

13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or in validate the Contract.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.

13.1.3 Each Variation may include:

a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b) changes to the quality and otherc haracteristics of any item of work,

c) changes to the levels, positions and/ or dimensions of any part of the Works,

d) omission of any work unless it is to be carried out by others,

e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or

f) changes to the sequence or timing of the execution of the Works.

13.1.4 The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Architect instructs after obtaining approval of the Procuring Entity.

13.2. Variation Order Procedure

13.2.1 Priortoany Variation Order under Sub-Clause 13.1.4 the Architect shall notify the Contractor of the nature and form of such variation. As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

a) A description of work, if any, to be performed and a programme for its execution, and

b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 8.3 or to any of the Contractor's obligations under the Contract, and

c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Architect shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out. If the Architect decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement.

If the Architect and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

13.2.2 Disagreement on Adjustment of the Contract Price

If the Contractor and the Architecture unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Bills of Quantities or Schedule of Daywork Prices. If the rates contained in the Bills of Quantities or Dayworks Prices are not directly applicable to the specific work in question, suitable rates shall be established by the Architect reflecting the level of pricing in the Dayworks Prices. Where rates are not contained in the said Prices, the amount shall be such as is in all the circumstances reasonable, reflecting a market price. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation. The Contractor shall also be entitled to be paid:

a) The cost of any partial execution of the Work srendered useless by any such variation,

b) Thecostof making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,

c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and

d) the net effect of the Contractor's financec osts, including interest, caused by the variation.

The Architect shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

13.2.3 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forth with proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract. The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause31.3.

13.3 Value Engineering

13.3.1 TheContractor may, at anytime, submit to the Architect written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Procuring Entity of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Procuring Entity of the completed Works, or
(iv) otherwise be of benefit to the Procuring Entity.

13.3.2 The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

13.2.3 If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

a) The Contractor shall design this part,

b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and

c) if this change results in a reduction in the contract value of this part, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall behalf (50%) of the difference between the following amounts:

i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.8 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and

ii) the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any improvement in quality, anticipated life or operational efficiencies.

13.3.4 However, if the amount established in item 13.2.3 (c) (i) is less than amount established in item 13.2.3 (c (ii), there shall not be a fee. However, if the if the amount established in item 13.2.3 (c) (i) is more than amount established in item 13.2.3 (c (ii), it shall result in a price variation to the Procuring Entity.

13.4 Variation Procedure for Value Engineering proposal

13.4.1 If the Architect requests a proposal, prior to instructing a Variation, the Contractor shall respond in writinga s soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

a) A description of the proposed work to be performed and a programme for its execution,

b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and

c) the Contractor's proposal for evaluation of the Variation.

13.4.2 The Architect shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst a waiting a response.

13.4.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Architect to the Contractor, who shall acknowledge receipt.

13.4.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Architect instructs or approves otherwise in accordance with this Clause.

13.5 Paymentin Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.6 Provisional Sums

13.6.1 Each Provisional Sum shall only be used, in whole or inpart, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include onlysuch amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the Architect May instruct:

a) Work to be executed (including Plant, Materialso r services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:

i) The actual amounts paid (or due to be paid) by the Contractor, and

ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall delive reach day to the Architect accurate statements induplicate which shall include the following details of the resources used in executing the previous day's work:

a) The names, occupations and time of Contractor's Personnel,
b) the identification, type and time of Contractor's Equipment and Temporary Works, and
c) the quantities and types of Plant and Materials used.

13.7.4 One copy of each statement will, if correct, or when agreed, be signed by the Architect and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.8 Adjustments for Changes in Legislation

13.8.1 The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of Kenya (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

13.8.2 If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost, which shall be included in the Contract Price.

13.8.3 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

13.8.4 Not withstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

13.9 Adjustments for Changes in Cost

13.9.1 In this Sub-Clause, “table of adjustment data” means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

13.9.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labor, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included a mounts to cover the contingency of other rises and falls in costs.

13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io
where:

P is the adjustment factor for the portion of the Contract Price payable.
A and **B** a recoefficients **specified in the SCC,** representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and
I m is the index prevailing at the end of the month being invoiced and **Io**c is the index prevailing 30 days before Bid opening for inputs payable.

NOTE: The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

13.9.4 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, itshall be determined by the Engineer. Forth is purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

13.9.5 Incases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the Central Bank of Kenya, of this relevant currency on the above date for which the index is required to be applicable.

13.9.6 Until such time as each current cost index is available, the Architect shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

13.9.7 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices there after shall be made using either (i) each index or price applicableo n the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Procuring Entity.

13.9.8 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or in applicable, as a result of Variations.

14. CONTRACT PRICE AND PAYMENT

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

a) The value of the payment certificate shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;
b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];
c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:

i) of the Works which the Contractor is required to execute, or
ii) for the purposes of Clause12 [Measurement and Evaluation]; and

d) the Contractor shall submit to the Engineer, within 30 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Architect may take account of the break down when preparing Payment Certificates but shall not be bound by it.

14.1.2 Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts there for, imported by the Contractor for the sole purpose of executing the Contract shall not be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

14.2.1 The Procuring Entity shall make an advance payment, as an interest-free loan for mobilization and cashflow support, when the Contractor submits a guarantee in accordance with this Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the **Special Conditions of Contract.**

14.2.2 Unless and until the Procuring Entity receives this guarantee, or if the total advance payment is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

14.2.3 The Architect shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment after receiving a Statement (under Sub-Clause 14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the a dvance payment. This guarantee shall be issued by a reputable bank or financial institutions elected by the Contractor and shall be in the form annexed to the Special Conditions or in another form approved by the Procuring Entity.

14.2.4 The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

14.2.5 Unless stated otherwise in **the Special Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Architect in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and

b) deductions shall be made at the amortization rate stated in the **Special Conditions of Contract** of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.

14.2.6 If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Procuring Entity], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as thec ase may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Procuring Entity], except for Sub-Clause 14.2.7 [Procuring Entity's Entitlement to Termination for Convenience], payable by the Contractor to the Procuring Entity.

14.3 Application for Interim Payment Certificates

14.3.1 The Contractor shall submit a Statement (in number of copies indicated in the **Special Conditions of Contract**) to the Architect after the end of each month, in aform approved by the Engineer, showing in detail

the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include there porton the progress during this month in accordance with Sub-Clause4.21 [Progress Reports].

14.3.2 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);

b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];

c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated **in the Special Conditions of Contract**;

d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

f) any other additions or deductions which may have become due under the Contractor otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

g) the deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

14.4.1 I fthe Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

a) The instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];

b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and

c) If these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

14.4.2 If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

14.5.1 If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

14.5.2 If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

14.5.3 The Architect shall determine and certify each addition if the following conditions a resatisfied:

a) The Contractor has:
   i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
   (ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

   and either:

b) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when shipped,
   ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and
   iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

c) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when delivered to the Site, and
   ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

14.5.4 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

14.5.5 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the Statemen tif any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Architect shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated **in the Special Conditions of Contract**. In this event, the Architect shall give notice to the Contractor accordingly.

14.6.3 An Interim Payment Certificate shall not be withheld for any other reason, although:
a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

4.6.4 The Architect may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Architect acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:
a) The advance payment shall be paid within 60 days after signing of the contract by both parties or within 60 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub- Clause 14.2 [Advance Payment], which ever is later;
b) The amount certified in each Interim Payment Certificate within 60 days after the Architect Issues Interim Payment Certificate; and
c) the amount certified in the Final Payment Certificate within 60 days after the Procuring Entity Issues Interim Payment Certificate; or after determination of any disputed amount shown in the Final Statement

in accordance with Sub-Clause 16.2 [Terminationby Contractor].

14.7.2 Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (forth is currency) specified in the Contract.

14.8 Delayed Payment

14.8.1 If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges (simple interest) monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b) of the date on which any Interim Payment Certificate isissued.

14.8.2 These financing charges shall be calculated at the annual rate of three percentage points above the mean rate of the Central Bank in Kenya of the currency of payment, or if not available, the inter bank offered rate, and shall be paid in such currency.

14.8.3 The Contractor shall be entitled to this payment without formal notice and certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

14.9.1 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

14.9.2 Promptly after the latest of the expiry dates of the Defects Liability Periods, the outstanding balance of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

14.9.3 However, if any work remains to be executed under Clause 11 [Defects Liability], the Architects hall be entitled to withhold certification of the estimated cost of this work until it has been executed.

14.9.4 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause13.8 [Adjustments for Changes in Cost].

14.9.5 Unless otherwise stated in the Special Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the Special Conditions or in another form approved by the Procuring Entity and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money.

14.9.6 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Completion Certificate.

14.10 Statement at Completion

14.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Architect three copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:

a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
b) any further sums which the Contractor considers to be due, and
c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

14.10.2 The Architect shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.11 Application for Final Payment Certificate

14.11.1 Within 60 days after receiving the Completion Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

a) The value of all work done in accordance with the Contract, and
b) Any further sums which the Contractor considers to be due to him under the Contractor otherwise.

14.11.2 If the Architect disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Architect may reasonably require within 30 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Architect the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it be comes evident that a dispute exists, the Architect shall deliver to the Procuring Entity (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Procuring Entity (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the out standing balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

14.13.1 Within 30days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall deliver, to the Procuring Entity and to the Contractor, the Final Payment Certificate which shall state:

a) The amount which he fairly determines is finally due, and
b) After giving credit to the Procuring Entity for all amounts previously paid by the Procuring Entity and for all sums to which the Procuring Entity is entitled, the balance (if any) due from the Procuring Entity to the Contractor or from the Contractor to the Procuring Entity, as the case may be.

14.13.2 If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall request theContractor to do so. If the Contractor fails to submit an application within a period of 30 days, the Architect shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Procuring Entity's Liability

14.14.1 The Procuring Entity shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

a) in the Final Statement and also,
b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

14.14.2 However, this Sub-Clause shall not limit the Procuring Entity's liability under his in demnification obligations, or the Procuring Entity's liability in any case of fraud, deliberate default or reckless misconduct by the Procuring Entity.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

a) If the Accepted Contract Amount was expressed in Local Currency only:
   i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
   ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
   iii) otherpaymentsanddeductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a) (i) above;
b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both Parties;
d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15. TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:

a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
c) without reasonable excuse fails:
   i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
   ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,
d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,
e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of theseacts or events, or
f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an induce mentor reward:
i) for doing or for bearing to do any action in relation to the Contract, or
ii) for showing or for bearing to show favor or disfavor to any person in relation to the Contract, or
iii) if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such induce mentor reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or
g) If the contract or repeatedly fails to remedy delivers defective work,

h) based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix B to these General Conditions, incompeting for or in executing the Contract.

15.2.2 In any of these events or circumstances, the Procuring Entity may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f) or (g) or (h), the Procuring Entity may by notice terminate the Contract immediately.

15.2.3 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contractor otherwise.

15.2.4 The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

15.2.5 After termination, the Procuring Entity may complete the Works and/ or arrange for any other entities to do so. The Procuring Entity and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

15.2.6 The Procuring Entity shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Procuring Entity, these items may be sold by the Procuring Entity in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

15.3 Valuation at Date of Termination

Assoon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Procuring Entity may:

a) Proceed in accordance with Sub-Clause 2.5 [Procurin Entity's Claims],
b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Procuring Entity, have been established, and/ or

c) recover from the Contractor any losses and damages incurred by the Procuring Entity and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Procuring Entity shall pay any balance to the Contractor.

15.5 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time at the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 30 days after the later of the dates on which the Contractor receives this notice or the Procuring Entity returns the Performance Security. The Procuring Entity shall not terminate the Contract under this Sub-Clausein order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor]. After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Fraud and Corruption

The Contractor shall ensure compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

15.7 Corrupt gifts and payments of commission

15.7.1 The Contractor shall not;

a) Offer or give or agree to give to any person in the service of the Procuring Entity any gift or consideration of any kind as an inducement or reward for doing or for bearing to door for having done or for borne to do any act in relation to the obtaining or execution of this or any other Contract for the Procuring Entity or for showing or for bearing to show favor or disfavor to any person in relation to this or any other contract for the Procuring Entity.

b) Enter into this or any other contract with the Procuring Entity in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment there of have been disclosed in writing to the Procuring Entity.

15.7.2 Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement and Asset Disposal Act (2015) and the Anti-Corruption and Economic Crimes Act (2003) of the Laws of Kenya.

16. SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Architect fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or Sub-Clause 14.7 [Payment],or not receiving instructions that would enable the contractor to proceed with the works in accordance with the program, the Contractor may, after giving not less than 30 days' notice to the Procuring Entity, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may bea nd as described in the notice.

16.1.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Terminationby Contractor].

16.1.3 If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

16.1.4 If the Contractor suffers delay and/ori ncurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

16.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

16.3 Termination by Contractor

16.3.1 The Contractor shall be entitled to terminate the Contract if:

a) the Architect fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
b) the Contractor does not receive the amount due under an Interim Payment Certificate within 90 days after the expiry of the time stated in Sub-Clause1 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),
c) the Procuring Entity substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,
d) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or
e) the Procuring Entity becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.

f) the Contractor does not receive the Architect instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

16.3.2 In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Procuring Entity, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

16.3.3 The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contractor otherwise.

16.4 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Procuring Entity's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

a) cease all further work, except for such work as may have been instructed by the Architect for the protection of life or property or for the safety of the Works,
b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and
c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

16.5 PaymentonTermination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

a) Return the Performance Security to the Contractor,
b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

a) Bodily injury, sickness, disease or death, of any person what so ever arising outo for in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful actor breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and
b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.1.2 The Procuring Entity shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property], unless and to the extent that any such damage or loss is attributable to any negligence, willful actor breach of the Contract by the contractor, the contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.2 Contractor's Care of the Works

17.2.1 The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement

Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Procuring Entity. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Procuring Entity.

17.2.2 After responsibility has accordingly passed to the Procuring Entity, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

17.2.3 If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractorisresponsiblefor their care, from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

17.2.4 The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Procuring Entity's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Procuring Entity's Risks] below, in so far as they directly affect the execution of the Works in Kenya, are:

a) War hostilities (whether war be declared or not),
b) rebellion, riot, commotion or disorder, terrorism, sabotage by persons other than the Contractor's Personnel,
c) explosive materials, ionizing gradiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such explosives, radiation or radio-activity,
d) pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds,
e) use or occupation by the Procuring Entity of any part of the Permanent Works, except as may be specified in the Contract,
f) design of any part of the Works by the Procuring Entity's Personnel or by others for whom the Procuring Entity is responsible, and
g) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

17.4 Consequences of Procuring Entity's Risks

17.4.1 If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Architect and shall rectify this loss or damage to the extent required by the Engineer.

17.4.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

(a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of TimeforCompletion], and
(b) paymentofany such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e)and (g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.

17.4.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

17.5 Intellectual and Industrial Property Rights

17.5.1 In this Sub-Clause, “infringement” shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and “claim” shall refer to a claim (or proceedings pursuing a claim) alleging an infringement.

17.5.2 Whenever a Party does not give notice to the other Party of any claim within 30 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

17.5.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

a) An un avoidable result of the Contractor's compliance with the Contract, or
b) A result of any Works be ingused by the Procuring Entity:
   i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
   ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

17.5.4 The Contractor shall indemnify and hold the Procuring Entity harmless again stand from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

17.5.5 IfaPartyisentitledtobeindemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

17.5.6 For operation and maintenance of any plan to requipment installed, the contractor shall grant a non-exclusive and non-transferable license to the Procuring Entity under the patent, utility models ,or other intellectual rights owned by the contractor or a third party from whom the contract or has received the rights to grant sub-licenses and shall also grant to the Procuring Entity a non-exclusive and non-transferable rights (without the rights to sub-license) to use the know how and other technical information disclosed to the contract or under the contract. Nothing contained here-in shall be construed as transferring ownership of any patent, utility model, trademark, design, copy right, know-how or other intellectual rights from the contractor or any other third party to the Procuring Entity.

17.6 Limitation of Liability

17.6.1 Neither Party shall be liable to the other Party for loss of use of anyW orks, loss of profit, loss of any contractor for any in director consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Procuring Entity's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

17.6.2 The total liability of the Contractor to the Procuring Entity, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Procuring Entity's Equipment and Free- Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in **the Special Conditions of Contract**, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.

17.6.3 This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

17.7 Use of Procuring Entity's Accommodation/Facilities

17.7.1 The Contractor shall take full responsibility for the care of the Procuring Entity provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

17.7.2 If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Procuring Entity is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18. INSURANCE

18.1 General Requirements for Insurances

18.1.1 In this Clause, “insuring Party” means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

18.1.2 Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Procuring Entity. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.3 Wherever the Procuring Entity is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.4 If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Procuring Entity shall act for Procuring Entity's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

18.1.5 Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

18.1.6 The relevant insuring Party shall, within the respective periods stated in **the Special Conditions of Contract** (calculated from the Commencement Date), submit to the other Party:

a) Evidence that the insurances described in this Clause have been affected, and
b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

18.1.7 When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

18.1.8 Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

18.1.9 Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or at tempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

18.1.10 If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contractor fails to provide satisfactory evidence and copies of policies in accordance with this Sub- Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

18.1.11 Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Procuring Entity, under the other terms of the Contractor otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Procuring Entity.

18.1.12 Procuring Entity in accordance with these obligations, liabilitieso r responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

18.1.13 Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Procuring Entity's Claims] or Sub- Clause 20.1 [Contractor's Claims], as applicable.

18.1.14 The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

18.2.1 The insuring Party shall insure the Works, Plant, Material sand Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

18.2.2 The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

18.2.3 The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

18.2.4 Unless otherwise stated in the Special Conditions, insurances under this Sub-Clause:

a) Shal lbe effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,

c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h)of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated **in the Special Conditions** of Contract (if an amount is not so stated,t his sub-paragraph (d) shall not apply), and

e) may however exclude loss of, damage to, and reinstatement of:

   i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

   ii) apart of the Works which is lost or damaged inorder to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,

   iii) apart of the Works which has been taken over by the Procuring Entity, except to the extent that the Contractor is liable for the loss or damage, and

   iv) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

18.2.5 If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Procuring Entity, with supporting particulars. The Procuring Entity shall then (i) be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to payment of an amount equivalent to such commercially reasonable terms asthe Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against Injury to Persons and Damage to Property

18.3.1 The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

18.3.2 This insurance shall be for a limit per occurrence of not less than the amount stated in **the Special Conditions of Contract**, with no limit on the number of occurrences. If an amount is not stated in the **Special Conditions of Contract**, this Sub-Clause shall not apply.

18.3.3 Unless otherwise stated in the Special Conditions, the insurances specified in this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties,

c) shall be extended to cover liability for all loss and damage to the Procuring Entity's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and

d) may however exclude liability to the extent that it arises from:

i) the Procuring Entity's right to have the Permanent Works executed on, over, under, in or

ii) through any land, and to occupy this land for the Permanent Works,

iii) damage which is an unavoidable result of the Contractor's obligations to execute the

iv) Works and remedy any defects, and

v) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

18.4.1 The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

18.4.2 The insurance shall cover the Procuring Entity and the Architect against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractoror any othe rof the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Procuring Entity or of the Procuring Entity's Personnel.

18.4.3 The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. FORCE MAJEURE

19.1 Definition of Force Majeure

19.1.1 In this Clause, “Force Majeure” means an exceptional event or circumstance:

a) Which is beyond a Party's control,

b) Which such Party could not reasonably have provided against before entering into the Contract,

c) which, having arisen, such Party could not reasonably have avoided or over come, and

d) which is not substantially attributable to the other Party.

19.1.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, s olong as conditions (a) to (d) above are satisfied:

a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,

b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,

c) riot, commotion, disorder, strike or lock out by persons other than the Contractor's Personnel,

d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as maybeattributabletotheContractor'suseofsuchmunitions, explosives, radiation or radio-activity, and

e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

19.2.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

19.2.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

19.2.3 Not withstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

19.3 Duty to Minimize Delay

Each Party shall at all times use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure. A Party shall give notice to the other Party when it ceases to be affected

by the Force Majeure.

19.4 Consequences of Force Majeure

19.4.1 If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/ or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in Kenya, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause18.2 [Insurance for Works and Contractor's Equipment].

19.4.2 After receiving this notice, the Architect shall proceed in a ccordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

19.5 Force Majeure Affecting Subcontractor

If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

19.6 Optional Termination, Payment and Release

19.6.1 If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

19.6.2 Upon such termination, the Architect shall determine the value of the work done and issue a Payment Certificate which shall include:

a) theamountspayableforanyworkcarriedoutforwhichapriceisstatedintheContract;

b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity'sdisposal;

c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;

d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and

e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

Not withstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Partyofsucheventorcircumstance:

a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. SETTLEMENT OF CLAIMS AND DISPUTES

20.1 Contractor's Claims

20.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

20.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

20.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

20.1.4 TheContractorshallkeepsuch contemporary records as may be necessary to substantiate any claim, either on the Site or at an other location acceptable to the Engineer. Without admitting the Procuring Entity's liability, the Architect may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/ or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Architect to inspect all these records and shall (if instructed) submit copies to the Engineer.

20.1.5 Within 42days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Architect fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/ or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) This fully detailed claim shall be considered as interim;

b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/ or amount claimed, and such further particulars as the Architect may reasonably require; and

c) The Contractor shall send a final claim within 30 days after the end of the effects resulting from the eventor circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

20.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Architect and approved by the Contractor, the Architect shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars but shall nevertheless give his response on the principles of the claim within the above defined time period.

20.1.7 Within the above defined period of 42 days, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

20.1.8 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract.Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

20.1.9 If the Architect does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Architect and any of the Parties may refer the dispute for amicable settlement in accordance with Clause 20.3.

20.1.10 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/ or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 20.3.

20.2 Procuring Entity's Claims

20.2.1 If the Procuring Entity considers itself to be entitled to any payment under any Clause of these Conditionsor otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Architect shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], or for other services requested by the Contractor.

20.2.2 The notice shall be given as soon as practicable and no longer than 30 days afte rthe Procuring Entity became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

20.2.3 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Procuring Entity considers itself to be entitled in connection with the Contract. The Architect shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Procuring Entity is entitled to be paid by the Contractor, and/ or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

20.2.4 This amount may be included as a deduction in the Contract Price and Payment Certificates. The Procuring Entity shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

20.3 Amicable Settlement

Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 20.1 above should move to commence arbitrationa fter 60 days from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

20.4 Matters that may be referred to arbitration

Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

a) Whether or not the issue of an instruction by the Architect is empowered by these Conditions.
b) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
c) Any dispute arising in respect risks arising from matters referred to in Clause 17.3 and Clause 19.
e) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

20.5 Arbitration

20.5.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.3 shall be finally settled by arbitration.

20.5.2 No arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

20.5.3 Not withstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.

20.5.4 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and a ward any sums which ought to have been the subject of or included in any certificate.

20.5.5 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision require mentor notice had been given.

20.5.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Architect from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

20.5.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

20.5.7 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Architect shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.5.8 Thetermsofthere muneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

20.6 Arbitration with National Contractors

20.6.1 If the Contractis with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws ofKenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

i) Architectural Association of Kenya
ii) Institute of Quantity Surveyors of Kenya
iii) Association of Consulting Engineers of Kenya
iv) Chartered Institute of Arbitrators (Kenya Branch)
v) Institution of Engineers of Kenya

20.6.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

20.7 Arbitration with Foreign Contractors

20.7.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.

20.7.2 The place of arbitration shall be a location specified in the **SCC;** and the arbitration shall be conducted in the language for communications defined in Sub-Clause1.4 [Law and Language].

20.8 Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

20.9 Failureto Comply with Arbitrator's Decision

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 In the even tthat a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

20.10 Contract operations to continue

Notwithstanding any reference to arbitration herein,

1.1.1 the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

1.1.2 the Procuring Entity shall pay the Contractor any monies due the Contractor.

Section IX - Special Conditions of Contract

The following Special Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Conditions	**Sub-Clause**	**Data**
Part A - Contract Data		
Procuring Entity's name and address	Heading	*RURAL ELECTRIFICATION AND RENEWABLE ENERGY CORPORATION*
Name and Reference No. of the Contract	Heading and 1.1	Dadajabula Solar PV Mini Grid, In Wajir South Constituency, Wajir County *RFX No. 1000000791*
Engineers Name and address	Heading and 3.1.1	*Eng. Jonathan Mbutu* *P.O Box 34585 – 00100 NAIROBI*
Contractor's Representative's name	4.3.1	
Key Personnel names	16.9.1	
Time for Completion	1.1.	32 Weeks
Defects Notification Period	1.1	14 days
Sections	1.1	
Electronic transmission systems	1.3	Yes
Time for the Parties entering into a Contract Agreement	1.6	Within 30days
Commencement Date	8.1.1	Immediately after contract signature
Time for access to the Site	2.1.1	No later than the Commencement Date, and not later than 21 days after Commencement Date
Architect Duties and Authority	3.1.6 (b) (ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of 10% shall require approval of Rural Electrification and Renewable Energy Corporation.
Performance Security	4.2.1	The performance security will be in the form of a *"performance bond"* in the amount(s) of 10 percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.
Normal working hours	6.5	Specify
Delay damages for the Works	8.7 & 14.15 (b)	No
Maximum amount of delay damages	8.7.1	___2___% of the final Contract Price.
Provisional Sums	13.6. (b)(ii)	*[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]* ____5___% contigency
Adjustments for Changes in Cost	13.9	Period "n" applicable to the adjustment multiplier "Pn": ___N/A_____ *[Insert the period if different from one (1) month; if period "n" is one (1) month, insert "not applicable"]*

Conditions	**Sub-Clause**	**Data**
Total advance payment	14.2.1	__0__% Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable *[Insert number and timing of installments if applicable]*
Repayment amortization rate of advance payment	14.2.5 (b)	___0____%
Percentage of Retention	14.3.2 (c)	10%
Limit of Retention Money	14.3.2 (c)	10% of the Accepted Contract Amount
Plant and Materials	14.5.3(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment Free on Board ____N/A_____ *[list]*.
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site _____N/A_____ *[list]*.
Minimum Amount of Interim Payment Certificates	14.6.2	40 % of the Accepted Contract Amount.
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Specify 0% rate per month of delayed payment.
Maximum total liability of the Contractor to the Procuring Entity	17.6.2	*n/a*
Periods for submission of insurance:	18.1.6	*15days*
a. evidence of insurance.		15 days
b. relevant policies		15 days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	*nil*
Minimum amount of third-party insurance	18.3.2	*10 million*
The place of arbitration	20.7.2	*Nairobi, Kenya*

SECTION X - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 – REQUEST FOR REVIEW

FORM No. 3-LETTEROF AWARD

FORM No. 4 - CONTRACT AGREEMENT

FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 6- PERFORMANCE SECURITY [Option 2– Performance Bond]

FORM No. 7 - ADVANCE PAYMENT SECURITY

FORM No. 8 - RETENTION MONEY SECURITY

FORM No 1: NOTIFICATION OF INTENTION TOAWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative

   i) Name: *[insert Authorized Representative's name]*

   ii) Address: *[insert Authorized Representative's Address]*

   iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*

   iv) Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*) _____

3. Notification of Award

   i) Procuring Entity: *[insert the name of the ProcuringEntity]*

   ii) Project: *[insert name ofproject]*

   iii) Contract title: *[insert the name of thecontract]*

   iv) ITT No: *[insert ITT reference number from ProcurementPlan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

   a) The successful tenderers

   i) Name of successful Tender _____

   ii) Address of the successful Tender _____

   _____

   iii) Contract price of the successful Tender Kenya Shillings _____

   (in words _____)

   b) The reasons for your tender being unsuccessful are as follows:

   c) OtherTenderers

   Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The dead line to request a debriefing expires at midnight on [*insert date*] (*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
   i) Attention: [*insert full name of person, if applicable*]
   ii) Title/position: [*insert title/position*]
   iii) Agency: [*insert name of Procuring Entity*]
   iv) Email address: [*insert email address*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receip tof your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
   i) Attention: [*insert full name of person, if applicable*]
   ii) Title/position: [*insert title/ position*]
   iii) Agency: [*insert name of Procuring Entity*]
   iv) Email address: [*insert email address*]

c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations a vailable from the Website www.ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

e) There are four essential requirements:
   i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process and is the recipient of a Notification of Intention to Award.
   ii) The complaint can only challenge the decision to award the contract.
   iii) You must submit the complaint within the period stated above.
   iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

_____

Telephone: _____

FORM NO. 2- REQUEST FOR REVIEW

FORM FOR REVIEW (r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO…….OF…….20……...

BETWEEN

……...…….APPLICANT

AND

……RESPONDENT (Procuring Entity)

Request for review of the decision of the……. (Name of the Procuring Entity of ……dated the…day of …….20…….in the matter of Tender No……..…of ……..20….. for ..... (Tender description).

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….P. O. Box No……. Tel. No……..Email ……, hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:

1.

2.

By this memorandum, the Applicant requests the Board for an order/orders that:

1.

2.

SIGNED ……..(Applicant) Dated on…….day of ……/…20……

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on……day of ……....20….……

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

letterhead paper of the Procuring Entity]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amoun tin numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is here by accepted by…… *(name of Procuring Entity)*.

You are requested to furnish the Performance Security within in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Procuring Entity: .....

Attachment: *Contract Agreement:* .....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the day of……. 20……., between……. ……...of……. (hereinafter "the Procuring Entity"), of the one part, and_____of_____(hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Worksknownas_____should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Worksand the remedying of any defects there in,

The Procuring Entity and the Contractor agree as follows:

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

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

   a) theNotification of Award
   b) the Form of Tender
   c) the addenda Nos_____(if any)
   d) the Special Conditions of Contract
   e) the General Conditions of Contract;
   f) the Specifications
   g) the Drawings*;* and
   h) the completed Schedules and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor here by covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity here by covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects there in, 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.

   INWITNESS where of the parties here to have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

   Signeda nd sealed by_____(for the Procuring Entity)

   Signed and sealed by_____(for the Contractor).

FORM NO. 5 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: *[insert name and Address of Procuring Entity]*

Date: _____*[Insert date of issue]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informedthat_____(hereinafter called "the Contractor") has entered into Contract No._____dated_____with (*name of Procuring Entity*)_____(the Procuring Entity as the Beneficiary), for the execution of _____(hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. Atthe request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand it self or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the……...Day of……,2...…[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, inresponse tot he Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee." .....

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

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[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM No. 6- PERFORMANCE SECURITY

[Option 2– Performance Bond]

*[**Note:** Procuring Entities a readvised to use Performance Security – Unconditiona lDemand Bank Guarantee in stead of Performance Bond due to difficulties involved in calling Bond holder to action]*

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insertnameandAddressof*ProcuringEntity*]*

Date: _____*[Insert date of issue]*

PERFORMANCE BONDNo.:_____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"),are held and firmly bound unto_] as Obligee (hereinafter called "the Procuring Entity") in the amount of_____for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the_____day of_____,20_____, for_____in accordance with the documents, plans, specifications, and amendments there to, which to the extent here in provided for, are by reference made part here of and are here in after referred to as the Contract.

3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:

   a) Complete the Contract in accordance with its terms and conditions; or

   b) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make a vailable as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or

   c) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions upto a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative, this day _____of_____20_____.

SIGNED ON_____ on behalf of_____

By_____ in the capacity of_____

Inthepresenceof_____

SIGNED ON_____ on behalf of_____

By_____ in the capacity of_____

Inthepresence of_____

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of* ProcuringEntity*]*

Date: _____ *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ *dated* _____ with the Beneficiary, for the execution of _____ (hereinafter called" the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (*in words* _____) is to be made against an advance payment guarantee.

3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (*in words* _____)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, oronthe _____ dayof _____ ,2 _____ ,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

_____

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

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[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance paymen tas specified in the Contract.*

[2] *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 8 – RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: *[Insert name and Address of* Procuring Entity*]*

Date: *[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. *[insert reference number of the contract]* dated with the Beneficiary, for the executionof *[insert name of contract and brief description of* Works*]* (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys upto the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (*[insert amount in words])*[1] upon receipt by us of the Beneficiary's complying demands upported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifyingthedemand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or showgrounds for your demand or the sum specified there in.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number at *[insert name and address ofApplicant's bank]*.

5. This guarantee shall expire no later than the.....Day of.....2.....[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

_____

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.*

[2] *Insert a date that is twenty-eight days after the expiry of retention period after the actua lcompletion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the Tenderer by meeting one or more of the following conditions:

- *Directly or indirectly holding 25% or more of the shares.*
- *Directly or in directly holding 25% or more of the voting rights.*
- *Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.:_____[*insert identification no*]

Name of the Assignment:_____*[insert name of the assignment]* to:

_____*[insert complete name of Procuring Entity]*

In response to your notification of award dated_____*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	**Directly or indirectly holding 25% or more of the shares (Yes / No)**	**Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)**	**Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)**
[include full name (last, middle, first), nationality, country of residence]			

OR

ii) We declare that there is no Beneficial Owner meeting one or more of the following conditions: directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights. Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.

OR

We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Tenderer shall provide explanation on why it is unable to identify any Beneficial Owner]

Directly or indirectly holding 25% or more of the shares. Directly or indirectly holding25% or more of the voting rights.

Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer]"

Name of the Tenderer: .....[insert complete name of the Tenderer]*_____

*Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ** [insert complete name of person duly authorized to sign the Tender]*

Title of the person signing the Tender: ..... [insert complete title of the person signing the Tender]

Signature of the person named above: ..... [insert signature of person whose name and capacity are shown above]

Date signed ..... [insert date of signing] day of..... [Insert month], [insert year]