

Our Ref: KETRACO/ ST/007/2024

3rd October 2024

Notice to all Bidders.

TENDER ADDENDUM AND CLARIFICATION No. 1 (TAC 1)

RE: EPC Construction for the pilot digital 400/132kV Makindu Substation (KETRACO/ST/007/2024)

The following amendments are made to the specified provisions for the bidding documents for EPC Construction for the pilot digital 400/132 kV Makindu Substation (KETRACO/ST/007/2024).

Save where expressly amended by the terms of this clarification, the Principal Tender Document shall continue to be in full force and effect.

Find herein the ADDENDUM and CLARIFICATION No. 1, consisting of Fifty six (56) pages into the Principal Tender Documents as attached. This document should be returned along with dully filled Form of Tender.

All other terms and conditions of the Request for Proposal document remains the same.


HESBON KISERO
Ag. SENIOR MANAGER, SUPPLY CHAIN

Tender Addendum and Clarification No. 1 of Tender No. KETRACO/ST/007/2024 has been received and incorporated in the Tender Documents.

Name of Tenderer (in block letters):

Signature:

Date:

Signed for the Tenderer by (Name in block letters):

In the office bearer capacity of:



A. Addendum No. 1

1. The documents required to be submitted with the bid stated in **ITB 11.1** of Section II Bid Data Sheet has been amended as follows:-

| | |
|--------------|--|
| ITB 11.1 (I) | <p>The Bidder shall submit with its bid the following additional documents:</p> <ol style="list-style-type: none"> 1. All Technical Schedules with detailed information of offered materials and equipment, in which all required information, shall be filled completely as specified in the Tender documents. 2. Copies of Type Test Reports and technical documents (catalogues, brochures, drawings) of each major equipment offered shall form part of the bid. Copies of Type Test Reports shall meet the following requirements: <ol style="list-style-type: none"> a. Type test reports shall be carried out by a laboratory independent from the manufacturer or with the witness of an independent laboratory. Accreditation certificate for the testing laboratory shall be presented. b. Results of type tests shall have been conducted within the last seven years prior to the date of tender submission. The bidder shall submit contact details (Title, email and fax) of certifying laboratory. c. Testing materials and equipment in Type Test Reports shall have the same code/ country/ manufacturer and technical parameters as offered materials and equipment. Type tests of non-conforming materials/equipment shall not be accepted. d. Type test reports shall include all items tested and results confirming that they meet the requirements of applied standards as stipulated in Tender Documents. 3. The following information shall be submitted for equipment manufacturers: <ol style="list-style-type: none"> a. Quality Management System Manual and ISO 9001 certification of the equipment manufacturer or other internationally recognized equivalent. b. ISO 45001(Occupational Health and Safety) certification of the equipment manufacturer or other internationally recognized equivalent. c. Catalogues, literature, and supply reference lists of proposed equipment d. Equipment general arrangement drawings e. Duly signed manufacturer's authorization form from the major and additional equipment manufacturers in accordance with Section IV: Bidding Forms. <p>The major equipment are:</p> |
|--------------|--|



MEU

| | |
|--|---|
| | <ul style="list-style-type: none"> i. Power transformers ii. Reactors iii. Conductors iv. OPGW and Termination Equipment v. Earth wire vi. High Voltage, Medium Voltage and Low Voltage Switchgear (Circuit Breakers, Disconnectors and Earth Switches) vii. Instrument Transformers viii. Surge Arrestors ix. Control And Protection Equipment (Relays, BCUs, PMUs, MUs, SCUs, Meters, AVR) x. Substation Automation System xi. Communication System xii. Diesel Generator xiii. Substation Auxiliary Transformer xiv. Insulators <p>The additional equipment are:</p> <ul style="list-style-type: none"> i. Galvanised Steel Structures (Gantries, Equipment Supports and Towers) ii. Hardware fittings iii. MV & LV Cables iv. Firefighting and fire alarm systems <p>Low Voltage system</p> |
|--|---|

2. **BOQ- Price Schedules** have been revised and replaced. Refer to attached revised Price schedules for Makindu BOQ-SS1. Bidders are required to fill in the new Price Schedules as these reflect all the changes made by the Employer in line with this Tender Addendum and Clarification.
3. **Part 2-Appendix A-TDS** for Makindu have been revised and replaced. Refer to attached revised Technical Schedules. Bidders are required to fill in the new Technical Schedules as these reflect all the changes made by the Employer in line with this Tender Addendum and Clarification.
4. **Section III - Evaluation and Qualification Criteria** Clause 1 has been revised as follows:-




1. Evaluation

1.1 Technical Evaluation

In addition to the criteria listed in ITB 35.2 (a) – (c) the following factors shall apply:

The assessment of the Technical Proposal submitted by a Bidder shall comprise

- a) evaluation of the Bidder's technical capacity to mobilize key equipment and key personnel to carry out the works
- b) construction method
- c) construction schedule
- d) Sufficiently detailed supply sources, in accordance with requirements specified in Section VII – Employer's Requirements.

1.2 Economic Evaluation

The following factors and methods will apply:

(a) Time Schedule:

Time to complete and commission the Plant and Installation Services from the effective date specified in Article 3 of the Contract Agreement is **24 Months**; with time for completion of pre-commissioning activities being 21 months and time for commissioning being 3 months. No credit will be given for earlier completion and commissioning. Proposals with schedules above 24 months will be rejected.

(b) Functional Guarantees of the Plant and Installation Services

The evaluation will be based on the losses indicated by the Contractor in the Guaranteed Technical Schedules.

The total capitalized cost of the losses will be added to the cost of transformers/reactors for comparing bids.

The cost of guaranteed power transformer no-load and load losses will be added to the transformer price, and the evaluated transformer cost will be calculated as per the following formula:

$$C_{Tev} = C_T + (L_n \times C_{Ln}) + (L_L \times C_{LL}) + (L_R \times C_{LR})$$

Where:

- C_{Tev} = The evaluated cost of the transformer/reactor;



MEN

- **C_T** = The cost of the transformer/reactor as indicated in the Schedule of Rates and Prices;
- **L_n** = The deviation in kW from the no-load losses value indicated in the Schedule of Guaranteed Technical Characteristics;
- **L_L** = The deviation in kW, at continuous maximum rating, from the load losses value as indicated in the Schedule of Guaranteed Technical Characteristics;
- **L_R** = The deviation in kVA, from the rated value as indicated in the Schedule of Guaranteed Technical Characteristics; (Maximum deviation of 2.5% is allowed)
- **C_{L_n}** = The cost per kW of no-load losses, that is 900,000 KES/kW;
- **C_{L_L}** = The cost per kW of load losses, that is, 500,000 KES/kW.
- **C_{L_R}** = The cost per kVA of rated value, that is,
 - 40,000 KES/kVA for deviation of 1% and above up to a maximum of 2.5% in the rated value
 - A prorated value of the above rate for a deviation of less than 1%



| | Description | Required | For the purposes of evaluation an adjustment as calculated below will be added to the tender price. |
|----|--|--|--|
| 1. | 400/132kV Power Transformer - Rated power at site conditions (ONAF1/ONAF2) | 90 MVA | Transformers with a rated power less than 2.5% of the required power rating will be rejected. |
| 2. | 11/0.415kV Auxiliary Transformer - Rated power at site conditions | 500 kVA | Ksh 40,000/KVA for one percent (1%) or pro-rata for less than one percent drop in the rated value. |
| 3. | 400/132kV Power Transformer losses | a) Maximum no load losses: 80 KW b) Maximum load losses at 75°C and rated frequency: - ONAF rated power (90MVA) and principal tapping- to be proved by test and calculation: 240 (Max) at 90MVA Base - ONAN rated power (75MVA) and principal tapping- to be proved and calculation: 180 (Max) 75 MVA Base c) Maximum Auxiliary Power 6 KW | Transformers with losses 2.5% above the required losses will be rejected After commissioning of transformers, in case of the tested load loss and no-load loss values differ from the guaranteed ones, the below penalties will be applied as liquidated damages: - No Load: USD 9,000 / kW - Load Loss: USD 4,000 / kW -Auxiliary Power: USD 4,000/kW |
| 4. | 400 kV Reactor Rated Power | 50 MVAR | Reactors with a rated power less than 2.5% of the required power rating will be rejected. |
| 5. | 400 kV Reactor Rated Power | Maximum losses at rated voltage and frequency: 120 kW | Reactors with losses 2.5% above the required losses will be rejected |

Any adjustments in price that result from the above procedures shall be added, for purposes of comparative evaluation only, to arrive at an "Evaluated Bid Price." Bid prices quoted by bidders shall remain unaltered.

In reference to ITB 31.3 the Employer for evaluation purposes only, will add to the bid price the cost of quantifiable deviations and omissions from the Technical Specifications as identified in the bidding document. The adjustment shall be made by loading to the bidder the average price of the other substantially responsive bidders.

Loaded Bid Price Value of omission = $(P1+P2+P3+.....+Pn)/n$

Where n= number of substantially responsive bidders.

1.3 Technical alternatives

Technical alternatives are not permitted.

5. Section X: Appendix 8 have been revised as follows:-

Appendix 8. Functional Guarantees

1. Functional Guarantees

Subject to compliance with the foregoing preconditions, the Contractor guarantees the values indicated in the respective Specification for the following items/materials.

1.1. 400/132kV, 90 MVA main transformers

- Iron loss
- Copper loss at continuous maximum rated
- Auxiliary Power

1.2. 400 kV , 50 MVAR Reactors

- Losses

2. Failure in Guarantees and Liquidated Damages

If the actual value of the relevant parameter of the specified item / material (i.e. main transformers/reactors) as measured at the witnessed shop test / factory acceptance test is found to be not meeting the guaranteed value then the acceptance or otherwise of the transformers/reactors shall be as follows.

The acceptance of Transformers/Reactors yielding component losses higher than the guaranteed values shall be governed by either of the following.



1. Component losses more than guaranteed values but within the tolerance permitted under IEC 60076 Part 1.

Transformers/Reactors shall be accepted subject to full compliance with all technical particulars including temperature rises at CMR and subject to the Contractor accepting deduction from the contract price of charges for each kW on part thereof component losses more than the guaranteed values at the evaluation rates below. Values more than 0.5KW will be rounded off to the next KW.

2. Component losses more than the guaranteed values and exceeding the tolerance permitted under IEC 60076 Part 1 shall be rejected.

In the event of transformers/reactors, which are either equal to or below the guaranteed losses values, the Contractor will not be entitled to any premium in respect of reduction in losses below the guaranteed values

3. Evaluation rate

| US Dollar per kW of Guaranteed Loss | | | |
|-------------------------------------|--------------|--------------------|-----------------|
| | No Load Loss | Copper Loss at CMR | Auxiliary Power |
| Main Transformer | 9,000 | 4,000 | 4,000 |

| US Dollar per kW of Guaranteed Loss | |
|-------------------------------------|--------|
| | Losses |
| Reactor | 4,000 |



6. **Section III - Evaluation and Qualification Criteria** Clause 2.3 has been revised as follows:-

2.3 Personnel

The Bidder must demonstrate that it will have the personnel for the key positions that meet the following requirements:

| No. | Position | Total Work Experience (years) | Experience In Similar Work (years) | Minimum Qualifications |
|-----|---|-------------------------------|---|--|
| P1 | Project Manager <ul style="list-style-type: none"> - To be stationed in the Contractor's Project office in Kenya dedicated to the project. | 15 | At least three (3) completed projects in similar position in the last ten (10) years | <ul style="list-style-type: none"> Bachelor's Degree in Electrical, Mechanical, Civil Engineering or equivalent Valid license to practice engineering as a professional engineer in country of origin or residence |
| P2 | Construction Manager <ul style="list-style-type: none"> To be stationed in the Site office in Kenya dedicated to the project. | 10 | At least two (2) completed substation and line projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> Bachelor's Degree in Civil, Electrical Engineering or equivalent Valid license to practice engineering as a professional engineer in country of origin or residence |
| P3 | Substation Electrical Engineer | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> Bachelor's Degree in Electrical Engineering or equivalent Valid license to practice engineering as a professional engineer in country of origin or residence |
| P4 | Control and Protection Engineer | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> Bachelor's Degree in Electrical Engineering or equivalent Valid license to practice engineering as a professional engineer in country of origin or residence |

MEU

| | | | | |
|-----|---|----|--|---|
| P5 | Civil/Structural Engineer | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> • Bachelor's Degree in Civil Engineering or equivalent • Valid license to practice engineering as a professional engineer in country of origin or residence |
| P6 | Transmission Line Engineer | 10 | At least two (2) completed line projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> • Bachelor's Degree in Civil Engineering or equivalent • Valid license to practice engineering as a professional engineer in country of origin or residence |
| P7 | Communications Expert | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> • Bachelor's Degree in Electrical Engineering or equivalent • Valid license to practice engineering as a professional engineer in country of origin or residence |
| P8 | Commissioning Engineer | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> • Bachelor's Degree in Electrical Engineering or equivalent • Experience in Digital substation testing and commissioning • Valid license to practice engineering as a professional engineer in country of origin or residence |
| P9 | SCADA Systems Expert | 10 | At least two (2) completed substation projects in similar position in the last seven (7) years | <ul style="list-style-type: none"> • Bachelor's Degree in Electrical Engineering or equivalent • Experience in Digital substation testing and commissioning • Valid license to practice engineering as a professional engineer in country of origin or residence |
| P10 | Environmental, Health & Safety Specialist <ul style="list-style-type: none"> • To be stationed in the Site office in Kenya dedicated to the project. | 7 | At least one (1) completed substation projects in similar position in the last seven (5) years | Diploma in any technical field with training in Safety, Health and Environment |

MEU

| | | | | |
|-----|--|----|--|---|
| P11 | Social Safeguards Specialist | 7 | At least one (1) completed substation projects in similar position in the last seven (5) years | Diploma or course that has social and environmental and safeguards assessment |
| P12 | Quality Control Specialist | 7 | At least one (1) completed substation projects in similar position in the last five (5) years | |
| P13 | Gender Based Violence (GBV)/ Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) Expert | 5 | 3 years experience | |
| P14 | Scheduler | 10 | At least one (1) completed substation projects in similar position in the last seven (7) years | |

The Bidder shall provide details of the proposed personnel and their experience records in the relevant Information Forms (PER-1 and PER-2) included in Section IV, Bidding Forms.

Notes:

All personnel shall be fluent in reading, writing and speaking the English language

The contractor's engineers who shall form part of the key personnel must be registered as Professional Engineers with the Engineers Board of Kenya. Compliance with this shall be mandatory following award.



7. **Section III - Evaluation and Qualification Criteria** Clause 2.5 has been revised as follows:-

2.5 Subcontractors/manufacturers

Subcontractors/manufacturers for the following major items of supply or services must meet the following minimum criteria, herein listed for that item:

| S/No | Description of Item | Minimum Criteria to be met by Manufacturers | Submission Requirement |
|------|----------------------------|---|--|
| 1. | 400kV Switchyard equipment | <ul style="list-style-type: none"> i. 15 years manufacturing experience of 400kV or above of switchyard equipment. ii. 400kV Switchyard equipment being in successful operation for at least 7 years. The operational experience shall be supported by end-user certificates/letters from at least three (3) utilities/clients/EPC contractor with comprehensive contact details. iii. Supply of 400kV switchyard equipment to at least five (5) project sites of which shall be outside the manufacturer's home country, supported by end-user certificates/letters from the utilities/clients/EPC contractor with comprehensive contact details. | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old, • Quality Assurance manual, • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English |
| 2. | 132kV switchyard equipment | <ul style="list-style-type: none"> i. 15 years manufacturing experience of 132kV or above of switchyard equipment ii. 132kV Switchyard equipment being in successful operation for at least 7 years. The | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old, • Quality Assurance manual, |

MEV

| | | | |
|----|-------------------------|---|--|
| | | <p>operational experience shall be supported by end-user certificates/letters from at least three (3) utilities/clients/EPC contractor with comprehensive contact details.</p> <p>iii. Supply of 132kV switchyard equipment to at least five (5) project sites of which shall be outside the manufacturer's home country, supported by end-user certificates/letters from the utilities/clients/EPC contractor with comprehensive contact details.</p> | <ul style="list-style-type: none"> • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English |
| 3. | Power/Auto Transformers | <p>i. 20 years of manufacturing experience of power transformers of rating 400/132kV, minimum 90MVA.</p> <p>ii. Power Transformers being in successful operation for at least 15 years. The operational experience shall be supported by end-user certificates/letters from at least three (3) utilities/clients/EPC contractor with comprehensive contact details.</p> <p>iii. Supply of 400/132kV Power Transformers to at least five (5) project sites of which shall be outside the manufacturer's home country, supported by end-user certificates/letters from the utilities/clients/EPC contractor with comprehensive contact details.</p> | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old • Quality Assurance manual, • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English • Short-circuit strength verification as per IEC-60076-5 for the Power Transformer, |

men

| | | | |
|----|--|--|---|
| 5. | Control and Protection System | <p>i. 15 years of manufacturing experience of control and protection systems.</p> <p>ii. Control and protection system being in successful operation for at least 10 years. The operational experience shall be supported by end-user certificates/letters from at least three (3) utilities/clients/EPC contractor with comprehensive contact details.</p> <p>iii. Supply of control and protection systems to at least three project sites of which shall be outside the manufacturer's home country, supported by end-user certificates/letters from the utilities/clients/EPC contractor with comprehensive contact details.</p> | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old • Quality Assurance manual, • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English |
| 6. | Substation and Automation systems, and communication systems (SASCS) | <p>i. 15 years of manufacturing experience</p> <p>ii. SASCS being in successful operation for at least 5 years. The operational experience shall be supported by end-user certificates/letters from at least three (3) utilities/clients/EPC contractor with comprehensive contact details.</p> <p>iii. Supply of SASCS to at least three (3) project sites of which shall be outside the manufacturer's home country, supported by end-user certificates/letters from the utilities/clients/EPC contractor with</p> | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old • Quality Assurance manual, • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English |

| | | | |
|----|---------------------------------|--|---|
| | | comprehensive contact details. | |
| 6. | 400 kV Transmission Line Towers | i. 15 years of manufacturing experience ii. The tower manufacturer shall have supplied towers for at least two (2) projects at 400kV voltage level or above in the last ten (10) years. The operational experience shall be supported by end-user certificates/letters from at least one (1) utilities/clients/EPC contractor with comprehensive contact details. | <ul style="list-style-type: none"> • Supply record • Outline drawing, • type test certificates issued by independent institution and less than 7 years old • Quality Assurance manual, • ISO 9001 certificate or equivalent • end-user certificates/letters from the utilities/clients/EPC contractor in English or certified translated into English |

8. **Section IX -Particular Conditions** Item PC 14 (g) has been revised as follows:-

g) Pre-Shipment Inspection

The Contractor shall procure the issuance of an Inspection Certificate of Conformity (COC) issued by an authorized KEBS partner prior to shipment. The certificate is a mandatory Customs Clearance document in Kenya. Kenya Bureau of Standards has appointed Societe Generale de Surveillance S.A and INTERTEK Group Plc to perform the Pre shipment Verification of Conformity programme on their behalf, depending on the country of supply.

The contractor can enjoy PVoC exemption if they meet the following conditions:

1. Possess an Approved Master List from National Treasury.
2. Evidence that 40% of the total goods for the project will be procured locally.

B. Tender Clarification No. 1 (TAC 1)

| Sr. No. | Reference | Subject | Bidder's Specific Query | KETRACO Response |
|---------|-----------|---|---|--|
| 1 | ITB 21.1 | The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. | Do all pages of the bid need to be signed by a person duly authorized to sign on behalf of the Bidder? | Yes |
| 2 | BDS 21.1 | The soft copies shall be structured strictly as per the hardcopies. Each part (Part 1, 2 and 3) shall be presented in a separate folder. Each Section shall be provided as single PDF files named as per ITB and BDS clause 11.1. | <p>1. Some of the files required to be submitted in Part 1 and Part 2 are duplicate, such as technical data sheet, type test report, manufacturers' ISO certificates, etc. For duplicate documents (mainly manufacturer' information and technical data sheets), we understand these files should be submitted through Part 2 and not Part 1. Please confirm.</p> <p>2. In BDS 21.1, it indicates that each part (Part 1, 2 and 3) shall be presented in a separate folder.</p> <p>3. We understand that Part 1, 2 and 3 correspond to Part 1 "Bidding Procedure", Part 2 "Employer's</p> | <p>1. Follow the instructions and guidelines indicated in the bid documents.</p> <p>2. Follow as stated under ITB 21.1</p> <p>3. Confirmed</p> <p>4. This is clearly indicated in the bid document in part 3. Kindly go through and provide documents as</p> |



| | | | | | | | | | | | | | | | | | | | | |
|-------|--|---|--|--|----------|------|-----|---|----------|-----|-------|---|----|----|-------|---|----|----|--|--|
| | | | Requirements” and Part 3 “Conditions of Contract and Contract Forms”. Please confirm. | required | | | | | | | | | | | | | | | | |
| | | | 4. Please indicate what documents should be submitted based on Part 3? | | | | | | | | | | | | | | | | | |
| 3 | Article 2.2, Section 1, Part 2: Article 2.3, Section 1, Part 2: Makindu BOQ- LILO Drawing: LILO arrangement | LILO of the existing 400kV Mombasa-Nairobi (Isinya-Mariakani) double circuit line and all associated works is approximately 2.4 kms. LILO of the existing 132kV Juja-Rabai single circuit line and all associated works is approximately 4.2 kms. Schedule 1, Makindu BOQ- LILO: <table><tr><td>1.2</td><td>Line Survey Shall include profile drawings, tower spotting, approval of routing and landmark for the Right of way (ROW)</td><td>route km</td><td>26.5</td></tr><tr><td>1.3</td><td>Soil investigation Shall include sample testing, data report</td><td>route km</td><td>6.5</td></tr></table> <table><tr><td>4.2.1</td><td>2 Circuits (x 3 Phase x Quad “ACSR” LARK per phase) including joints and jumpers</td><td>km</td><td>60</td></tr></table> <table><tr><td>4.7.1</td><td>2 Circuits (x 3 Phase x single ACSR LYNAK per phase) including joints and jumpers</td><td>km</td><td>23</td></tr></table> | 1.2 | Line Survey Shall include profile drawings, tower spotting, approval of routing and landmark for the Right of way (ROW) | route km | 26.5 | 1.3 | Soil investigation Shall include sample testing, data report | route km | 6.5 | 4.2.1 | 2 Circuits (x 3 Phase x Quad “ACSR” LARK per phase) including joints and jumpers | km | 60 | 4.7.1 | 2 Circuits (x 3 Phase x single ACSR LYNAK per phase) including joints and jumpers | km | 23 | The lengths of transmission lines for 400kV and 132kV in Part 2, BOQ and Drawing are inconsistent. Please clarify. | The survey is related to all the sections before and after the LILO as well as where is the existing OPGW joints are positioned. For Geotech it adds two-line length of the 400kV and 132kV For the conductor calculation follow the given formula |
| 1.2 | Line Survey Shall include profile drawings, tower spotting, approval of routing and landmark for the Right of way (ROW) | route km | 26.5 | | | | | | | | | | | | | | | | | |
| 1.3 | Soil investigation Shall include sample testing, data report | route km | 6.5 | | | | | | | | | | | | | | | | | |
| 4.2.1 | 2 Circuits (x 3 Phase x Quad “ACSR” LARK per phase) including joints and jumpers | km | 60 | | | | | | | | | | | | | | | | | |
| 4.7.1 | 2 Circuits (x 3 Phase x single ACSR LYNAK per phase) including joints and jumpers | km | 23 | | | | | | | | | | | | | | | | | |

HEU

| | | | | |
|---|--------|---|--|---|
| 4 | PC 14. | <p>a) All the materials, equipment and plant which will be incorporated into the permanent works are (unless exempted) subject to Import Duty, Import Declaration Fee (IDF), Railway Development Levy and Value Added Tax.</p> <p>c) Local Taxation: All materials, plant and equipment purchased locally for permanent installation of the project are subject to Value Added Tax.</p> <p>d) Tax exemption: Exemption is applicable for VAT as provided for under the First Schedule to the VAT Act 2013.</p> <p>If any local taxes and duties except withholding Tax/ Income Tax; are to be paid by the Contractor, the same shall be reimbursed by Employer.</p> | <p>The regulation of VAT and import duty in a), c) and d) are inconsistent.</p> <p>1. Based on d), we understand that only "Plant and Mandatory Spare Parts Supplied from Abroad" in Price Schedule No. 1 will be exempt from VAT. Please confirm.</p> <p>2. Based on d), we understand that profit tax, import duties and other local taxes and duties except withholding tax / income tax will be paid by Contractor and reimbursed by Employer. Please confirm.</p> <p>3. For local taxes and duties subsequently reimbursed by Employer, these costs don't need to be included in the quotation. Please confirm.</p> <p>4. Will the materials, equipment and plant incorporated into non-permanent works be exempt from VAT?</p> | <p>1. VAT exemption is applicable on taxable goods and services imported or purchased for direct and exclusive use in the implementation of official aid funded projects as provided for under the first schedule to the VAT act upon approval by the Cabinet Secretary responsible for the National Treasury</p> <p>2. Tax exemption is applicable on taxable goods and services imported or purchased locally for direct and exclusive use in the implementation of official aid funded projects. Exemption is applicable for VAT as provided for under the First Schedule to the VAT Act 2013. Other exemptions include exemption from Railway Development Levy (RDL), Customs Duties and IDF Fees. If exemption is not granted on these taxes, the same may be payable by the contractor directly to the relevant Authorities if and when due. The same will then be reimbursed by the Client to the Contractor and the contractor must submit all relevant supporting documents and evidence to facilitate reimbursement</p> <p>3. YES</p> |
|---|--------|---|--|---|

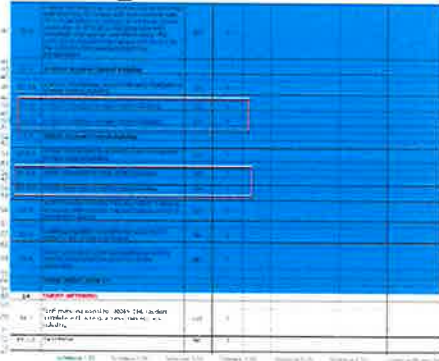
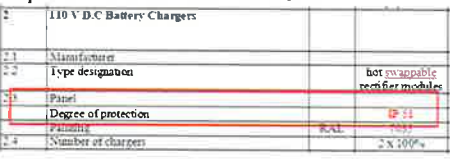
| | | | | |
|---|----------------------------------|--|--|--|
| | | | | <p>4. For contractor's equipment and machinery imported on temporary basis for the execution of the contract, the contractor is liable for payment of duties/taxes on importation, however the contractor may request temporary importation approval from Kenya Revenue Authority whereby the duties/taxes will not be paid if the imported materials are re-exported within the granted allowed period. The contractor will be liable for payment of taxes for consumable items and spare parts of its own machineries.</p> |
| 5 | PC 14 g) Pre-Shipment Inspection | The cost for Pre-Shipment inspection fee shall be reimbursed by the Employer | We understand that Pre-Shipment inspection fee doesn't need to be included in the Price Schedule, since it will be reimbursed by the Employer. | <p>Bidders may qualify for exemption of Pre-Export Verification of Conformity if they comply with the criteria issued by Kenya Bureau of Standards , refer to revised Bid document Part 3, section IX in Addendum 1 ,which is subject to change from time to time. Otherwise, bidders are advised to quote for the fees associated with Pre-Export Verification of Conformity/Pre-shipment inspection.</p> |



| | | | | |
|---|--|---|---|--|
| 6 | General | Geological report/data | If possible, kindly provide preliminary geological report/data for LILO and new construction substation which was done in the concept design stage. | No preliminary geological report/data are available. It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. KETRACO can facilitate the visits upon request. |
| 7 | <p>Part 1. Section I. Instruction to Bidder: 11.1(j)</p> <p>Part 1. Section I. Instruction to Bidder: 21.3</p> | <p>(j) in the case of a bid submitted by a JV, JV agreement, or letter of intent to enter into a JV including a draft</p> <p><i>Option A - Section I. Instructions to Bidders</i></p> <p>agreement, indicating at least the parts of the Plant to be executed by the respective partners:</p> <p>21.3 In case the Bidder is a JV, the Bid shall be authorized representative of the JV on behalf of the JV as to be legally binding on all the members as evidenced by power of attorney signed by their legal representatives.</p> | <p>1. In case the JV agreement drafted did not capture the parts of the plant to be executed by the partners a new agreement has to be drafted, would a change in signatories of the JV be allowable? Would a separate notification for this change be required.</p> <p>2. In the event the JV representative in the Power of Attorney captured in the prequalification stage will be changed to a different one during bidding, would a new Power of Attorney be sufficient or a separate notification for the change need will be required?</p> | <p>Bidders shall meet or continue to meet the criteria used at the time of prequalification as stipulated in Section III. Evaluation and Qualification Criteria (Following prequalification), Clause 2.1. While preparing their bids, bidders are reminded to comply with the format indicated in Section I. Instructions to Bidders, clause 21.</p> |

MEK

| | | | | | | | | |
|----------|---|--|---|---|--|---|---|---|
| 8 | <p>Part 1-Section I, Instruction to bidders No. 20.1</p> <p>And</p> <p>Part 1-Section II Bid Data Sheet, ITB 20.1</p> | <p>Section I, Instruction to bidders No. 20.1 gives the option for either a bid security or bid - securing declaration,</p> <p>20. Bid Security 20.1 The Bidder shall furnish as part of its bid, either a Bid-Securing Declaration or a bid security as specified in the BDS, in original form and in the amount specified in the BDS.</p> <p>20.2 A Bid-Securing Declaration shall use the form included in Section IV Bidding Forms.</p> <p>Whereas, Section II Bid Data Sheet, ITB 20.1 indicates a bid security as a mandatory requirement;</p> <table border="1"><tr><td>ITB 20.1</td><td>Bids shall be accompanied by a bid security in an amount of not less than EUR 700,000, issued by a recognized Kenyan bank as per the Form of Bid Security included in Section IV – Bidding Forms - Form of Bid Security (Bank Guarantee).</td></tr><tr><td></td><td>The bid security shall be valid for 28 days beyond the original validity period of 180 days, or 28 days beyond any period of extension if required under ITB 19.2</td></tr></table> | ITB 20.1 | Bids shall be accompanied by a bid security in an amount of not less than EUR 700,000, issued by a recognized Kenyan bank as per the Form of Bid Security included in Section IV – Bidding Forms - Form of Bid Security (Bank Guarantee). | | The bid security shall be valid for 28 days beyond the original validity period of 180 days, or 28 days beyond any period of extension if required under ITB 19.2 | <p>(i)Is Bid-Securing Declaration still an option?</p> <p>(ii)In the case we go for a bid security, will bid-securing declaration be a requirement?</p> | <p>The Bid Data Sheet provides the requirement.</p> <p>Comply to what is provided for in the bid data sheet</p> |
| ITB 20.1 | Bids shall be accompanied by a bid security in an amount of not less than EUR 700,000, issued by a recognized Kenyan bank as per the Form of Bid Security included in Section IV – Bidding Forms - Form of Bid Security (Bank Guarantee). | | | | | | | |
| | The bid security shall be valid for 28 days beyond the original validity period of 180 days, or 28 days beyond any period of extension if required under ITB 19.2 | | | | | | | |
| 9 | <p>Part 1; Section III Evaluation and Qualification Criteria(Following Prequalification): 2.2</p> | <p>Item 2.2 on financial resources is indicated as “not applicable” but the forms No.FIN 3.3 and FIN 3.4. provided</p> <p>2.2 Financial Resources – Not Applicable</p> <p>Using the relevant Forms No FIN-3.3 and FIN-3.4 in Section IV, Bidding Forms, the Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:</p> <p>(i) the following cash-flow requirement: and (ii) the overall cash flow requirements for this contract and its current works commitment.</p> | <p>Do we need to fill the forms, No.FIN 3.3 and FIN 3.4 as a prequalified JV?</p> | <p>Note that in Bid document Part 1, Section III, Evaluation and Qualification Criteria, clause 2.2 , Financial Resources, this is indicated as Not Applicable hence the relevant FIN forms will not apply.</p> | | | | |
| 10 | <p>Part 1: Section iv</p> | <p>The forms; FORM ELI-1.1; FORM ELI-1.2, ; FORM CON-2, ; FORM FIN-3.1, ; FORM FIN 3.2, ; FORM FIN 3.3, ; FORM FIN 3.4, ; FORM EXP-4.1, ; FORM EXP-4.2(a) and ; FORM EXP 4.2(b) comes immediately after;</p> | <p>Do we need to fill the listed forms as a prequalified JV?</p> | <p>Note that in Bid document Part 1, Section IV, Bidders Qualification Without prequalification is indicated as Not Applicable hence the relevant forms afterwards will not apply.</p> | | | | |

| | | | | |
|----|--|--|--|---|
| | | <p>Bidders Qualification without prequalification (Not Applicable)</p> <p>To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.</p> | | |
| 11 | The BOQ- PRICE SCHEDULES- Makindu BOQ-SS | <p>Schedule 1_SS</p>  | <p>The charger and battery capacity is not indicated. Is the capacity for the DC110V system 800AH and the capacity for the DC48V system 300AH?</p> | <p>Please refer Bid Document Part 2, Section 3 clause 8.2.2 for 110 V & 48 V Battery chargers. Please refer Bid Document Part 2, Section 3 clause 8.3.2 for 110 V Batteries and clause 10.3.4 for 48 V Battery. Refer to Bid document Part 2 Appendix-A-TDS section 18 and 19 for minimum values.</p> |
| 12 | Part 2 - Appendix A - TDS | <p>For the 110 V D.C. Battery Chargers, 110 V D.C. Switchboards, 48 V D.C and Battery Chargers 48 V D.C. Switchboards, the degree of protection is listed as IP51.</p>  | <p>The degree of protection is listed as IP51, which is not conducive to heat dissipation. Manufacturers generally provide IP4X.</p> | <p>Follow the requirements as indicated in Bid document Part 2 Appendix-A-TDS section 18 and 19</p> |



MPU

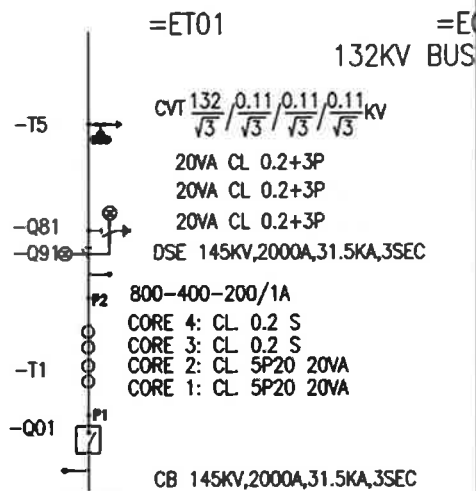
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|-------------------------------------|---|--|---|--|--|-----|--------------|--|--|-----|------------------|--|--|-----|----------------------|--|-------|-----|-----------------------------|--|--|-----|-------------------|--------|-----|-----|-------------------|----|--|---|-------------------------|--|--|---|----------------------------|--|--|-----|--------------|--|--|-----|------------------|--|---------------------------------|--------|-------|--|--|--|----------------------|--|-------|--|----------|-----|------|-----|--------------------|--|----------|---|------------------------|--|--|-----|--------------|--|--|-----|------------------|--|--|-----|-------|--|--|--|----------------------|--|-------|--|----------|-----|------|--|--|
| | | <table><tr><td>3</td><td>Battery Fuse Boxes in control house</td><td></td><td></td></tr><tr><td>3.1</td><td>Manufacturer</td><td></td><td></td></tr><tr><td>3.2</td><td>Type designation</td><td></td><td></td></tr><tr><td>3.3</td><td>Degree of protection</td><td></td><td>IP 51</td></tr><tr><td>3.4</td><td>Fuse rated current at 100°C</td><td></td><td></td></tr><tr><td>3.5</td><td>Remote signalling</td><td>Yes/No</td><td>Yes</td></tr><tr><td>3.6</td><td>Dimensions of box</td><td>mm</td><td></td></tr><tr><td>4</td><td>110 V D.C. Switchboards</td><td></td><td></td></tr></table> <table><tr><td>2</td><td>48 V D.C. Battery Chargers</td><td></td><td></td></tr><tr><td>2.1</td><td>Manufacturer</td><td></td><td></td></tr><tr><td>2.2</td><td>Type designation</td><td></td><td>hot swappable reconfigurable</td></tr><tr><td>17.2.3</td><td>Panel</td><td></td><td></td></tr><tr><td></td><td>Degree of protection</td><td></td><td>IP 51</td></tr><tr><td></td><td>Painting</td><td>RAL</td><td>7035</td></tr><tr><td>2.4</td><td>Number of chargers</td><td></td><td>2 x 100%</td></tr></table> <table><tr><td>4</td><td>48 V D.C. Switchboards</td><td></td><td></td></tr><tr><td>4.1</td><td>Manufacturer</td><td></td><td></td></tr><tr><td>4.2</td><td>Type designation</td><td></td><td></td></tr><tr><td>4.3</td><td>Panel</td><td></td><td></td></tr><tr><td></td><td>Degree of protection</td><td></td><td>IP 51</td></tr><tr><td></td><td>Painting</td><td>RAL</td><td>7035</td></tr></table> | 3 | Battery Fuse Boxes in control house | | | 3.1 | Manufacturer | | | 3.2 | Type designation | | | 3.3 | Degree of protection | | IP 51 | 3.4 | Fuse rated current at 100°C | | | 3.5 | Remote signalling | Yes/No | Yes | 3.6 | Dimensions of box | mm | | 4 | 110 V D.C. Switchboards | | | 2 | 48 V D.C. Battery Chargers | | | 2.1 | Manufacturer | | | 2.2 | Type designation | | hot swappable reconfigurable | 17.2.3 | Panel | | | | Degree of protection | | IP 51 | | Painting | RAL | 7035 | 2.4 | Number of chargers | | 2 x 100% | 4 | 48 V D.C. Switchboards | | | 4.1 | Manufacturer | | | 4.2 | Type designation | | | 4.3 | Panel | | | | Degree of protection | | IP 51 | | Painting | RAL | 7035 | | |
| 3 | Battery Fuse Boxes in control house | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 | Manufacturer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2 | Type designation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3 | Degree of protection | | IP 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4 | Fuse rated current at 100°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.5 | Remote signalling | Yes/No | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.6 | Dimensions of box | mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 110 V D.C. Switchboards | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 48 V D.C. Battery Chargers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Manufacturer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 | Type designation | | hot swappable reconfigurable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17.2.3 | Panel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Degree of protection | | IP 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Painting | RAL | 7035 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | Number of chargers | | 2 x 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 V D.C. Switchboards | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Manufacturer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 | Type designation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | Panel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Degree of protection | | IP 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Painting | RAL | 7035 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Part 2 | <p>and control equipment.</p> <p>13.5.2 Protection and control panel.</p> <p>Protection and control panels shall be front access, with swing door-lock design. Cabinets shall provide protection against the ingress of dust and moisture and shall be well ventilated.</p> <p>At 100kV and 132kV the cabinet arrangement shall be:</p> <p>a. For 100 kV OHL circuits: Combined cabinets for main 1 and main 2 protection. Auto-reclose function shall be in main 1 and main 2 protection IEDs with priority being on main 1 relay. Upon failure of main 1, the auto reclose function in main 2 relay shall take precedence.</p> <p>For compatibility with remote end substations especially on the line differential protection relays, following are necessary technical details of the 87L relays installed at these remote ends:</p> <p>i. Substation 1 Line at Jaiswa substation SHE/M/SEN-782352 MLFB: 7SD45221-6C006-710311 G4 RT = Standard, 170253353 Firmware: V04.74.00 Host system: V02.06.00 Protocol: V04.73.03 HNS-Type: 02.02.01</p> <p>ii. Substation 2 Line at Jaiswa substation</p> | <p>Since the substation on this side uses a domestic intelligent protection device and the line protection device on the other side needs to be replaced. SIEMENS will not be able to communicate with the intelligent protection device on this side of the station. Will the line protection be changed for compatibility?</p> | <p>Please refer to Bid document Part 2 Section 3 clause 13.5.2 which clearly defines the scope of work in regards to the line differential relay. It is the bidder's responsibility to ensure their design /solution provides compatibility between remote end and local end relays</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

MAN

| 14 | <p>Part 2 - Appendix A – TDS</p> <p>Drawings-SS-1_SLDs-KEY SLD-1_400 kV</p> | <p>3.8 420 kV CAPACITIVE VOLTAGE TRANSFORMER (METERING)</p> <table><thead><tr><th>S.No.</th><th>Description</th><th>Unit</th><th>Data Required</th><th>Data Offered</th></tr></thead><tbody><tr><td>1</td><td>Manufacturer & Place of manufacturing</td><td></td><td></td><td></td></tr><tr><td>2</td><td>Type</td><td>-</td><td>Capacitive</td><td></td></tr><tr><td>3</td><td>Maximum permissible partial discharge level at Um</td><td>pC</td><td>10</td><td></td></tr><tr><td>4</td><td>Maximum permissible partial discharge level at 1/2Um (V)</td><td>pC</td><td>5</td><td></td></tr><tr><td>5</td><td>Method of suppressing ferro resonance phenomena</td><td></td><td>RLC Damping</td><td></td></tr><tr><td>6</td><td>Number of secondary s</td><td>-</td><td>2</td><td></td></tr><tr><td>7</td><td>Rated voltage factor</td><td>-</td><td>1.8PU 3sec</td><td></td></tr><tr><td>8</td><td>Rated transformation ratio</td><td></td><td></td><td></td></tr><tr><td></td><td>Secondary I</td><td>kV</td><td>400/(√3/0.11)/√3</td><td></td></tr><tr><td></td><td>Secondary II</td><td>kV</td><td>400/(√3/0.11)/√3</td><td></td></tr><tr><td>9</td><td>Rated accuracy class</td><td></td><td></td><td></td></tr><tr><td></td><td>Secondary I</td><td>-</td><td>0.2</td><td></td></tr><tr><td></td><td>Secondary II</td><td>-</td><td>0.2</td><td></td></tr><tr><td>10</td><td>Rated output (burden to be 25-100% rated burden)</td><td></td><td></td><td></td></tr><tr><td></td><td>Secondary I</td><td>VA</td><td>50</td><td></td></tr><tr><td></td><td>Secondary II</td><td>VA</td><td>50</td><td></td></tr></tbody></table> <p>SA 360KV,10KA,CLASS5 CVT 400/√3/0.11/√3/0.11/√3/0.11 Win 1,2&3: CL3P/1.0-100VA CVT 400/√3/0.11/√3/0.11, Win 1&2: CL0.2,50VA CT 4000-2000/1 A CORE 1: 0.2S 15VA CORE 2: 0.2S 15VA DSE 420KV,4000A,40KA,3SEC</p> | S.No. | Description | Unit | Data Required | Data Offered | 1 | Manufacturer & Place of manufacturing | | | | 2 | Type | - | Capacitive | | 3 | Maximum permissible partial discharge level at Um | pC | 10 | | 4 | Maximum permissible partial discharge level at 1/2Um (V) | pC | 5 | | 5 | Method of suppressing ferro resonance phenomena | | RLC Damping | | 6 | Number of secondary s | - | 2 | | 7 | Rated voltage factor | - | 1.8PU 3sec | | 8 | Rated transformation ratio | | | | | Secondary I | kV | 400/(√3/0.11)/√3 | | | Secondary II | kV | 400/(√3/0.11)/√3 | | 9 | Rated accuracy class | | | | | Secondary I | - | 0.2 | | | Secondary II | - | 0.2 | | 10 | Rated output (burden to be 25-100% rated burden) | | | | | Secondary I | VA | 50 | | | Secondary II | VA | 50 | | <p>Parameters for CVT2 in TDS are As shown on the diagram do not match the parameters on the 400kV SLD. Please confirm.</p> | <p>Correct VT ratio is</p> <p>400/√3/0.11/√3-0.11/√3 kV</p> <p>Specification and requirements as indicated in the Bid Document Part 2- Appendix A TDS clause 3.8 shall apply.</p> |
|----------|---|--|------------------|--------------|------|---------------|--------------|---|---------------------------------------|----|--|--|---|------|---|------------|--|---|---|----|----|--|---|--|----|---|--|---|---|--|-------------|--|---|-----------------------|---|---|--|---|----------------------|---|------------|--|---|----------------------------|--|--|--|--|-------------|----|------------------|--|--|--------------|----|------------------|--|---|----------------------|--|--|--|--|-------------|---|-----|--|--|--------------|---|-----|--|----|--|--|--|--|--|-------------|----|----|--|--|--------------|----|----|--|---|---|
| S.No. | Description | Unit | Data Required | Data Offered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Manufacturer & Place of manufacturing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Type | - | Capacitive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Maximum permissible partial discharge level at Um | pC | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Maximum permissible partial discharge level at 1/2Um (V) | pC | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Method of suppressing ferro resonance phenomena | | RLC Damping | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Number of secondary s | - | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Rated voltage factor | - | 1.8PU 3sec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Rated transformation ratio | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary I | kV | 400/(√3/0.11)/√3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary II | kV | 400/(√3/0.11)/√3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Rated accuracy class | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary I | - | 0.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary II | - | 0.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Rated output (burden to be 25-100% rated burden) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary I | VA | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Secondary II | VA | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | <p>The BOQ- PRICE SCHEDULES- Makindu BOQ-SS</p> | <p>Schedule 1_SS</p> <table><thead><tr><th>Item No.</th><th>Description</th><th>Unit</th><th>Quantity</th></tr></thead><tbody><tr><td>1.13</td><td>Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed. Phase summation galvanised junction box will be provided</td><td>No.</td><td>20</td></tr></tbody></table> | Item No. | Description | Unit | Quantity | 1.13 | Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed. Phase summation galvanised junction box will be provided | No. | 20 | <p>The number of CVTs in the BOQ table does not match the number on the 400 kV SLD. The BOQ indicates 20 while the 400kV SLD indicates 18. Please clarify.</p> | <p>The numbers as indicated in the BOQ are correct and are in line with SLD.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Item No. | Description | Unit | Quantity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.13 | Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed. Phase summation galvanised junction box will be provided | No. | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Part 2 - Appendix A – TDS

| 4.8 132 kV CAPACITOR VOLTAGE TRANSFORMER - CVT2 | | | |
|---|-------------------------------|------|---|
| S.No. | Description | Unit | Data Required Data Offered |
| 1 | Manufacturer | - | - |
| 2 | Type | - | - |
| 3 | Model no. | - | - |
| Nominal characteristics | | | |
| 4 | Capacitance C1 and C2 | µF | 4400 |
| 5 | Series inductor | - | - |
| 6 | Inductance range | mH | - |
| 7 | Inductive range | ohm | - |
| 8 | Transformation ratio | - | 132KV/0.1 0.11KV/0.1 0.11KV/0.1 0.11KV/0.1 |
| Transformer characteristics | | | |
| 9 | HV/LV tap ratio range | - | - |
| 10 | Normal operating flux density | - | - |
| 12 | Primary voltage | V | 132KV |
| 13 | Secondary voltage | V | 110KV |
| 14 | Winding capacity | - | - |
| Burden (VA) on each winding (50/50/100) | | | |
| 15 | Number of secondary windings | - | 3 |
| 16 | Working conductor | - | 5p |
| 17 | Speedstar terminal voltage | V | 110KV |
| 18 | Circuit Diagram | - | - |



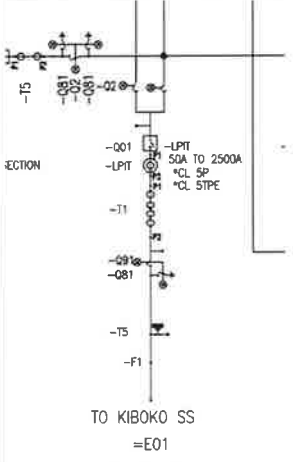
Parameters for CVT2 in TDS are As shown on the diagram do not match the parameters on the 132kv SLD. Please confirm.

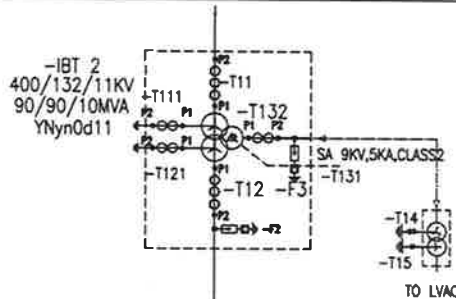
The correct class and burden for winding 1/2/3 is 0.2/50VA, 0.2/50VA and 3P/100VA.

Specification and requirements as indicated in the Bid Document Part 2- Appendix A TDS clause 4.8 shall apply.

| 17 | The BOQ- PRICE SCHEDULES- Makindu BOQ-SS | <p>Schedule 1_SS</p> <table border="1"> <tr> <td>83</td><td></td><td>132kV Capacitive voltage Transformer of Protection & Measuring (1-phase, three cores) for 132kV busbar. All accessories will be included to make testing and commissioning completed.</td><td>No</td><td>4</td></tr> <tr> <td>84</td><td>2.17</td><td></td><td></td><td></td></tr> <tr> <td>85</td><td></td><td></td><td></td><td></td></tr> </table> | 83 | | 132kV Capacitive voltage Transformer of Protection & Measuring (1-phase, three cores) for 132kV busbar. All accessories will be included to make testing and commissioning completed. | No | 4 | 84 | 2.17 | | | | 85 | | | | | The number of CVTs in the BOQ table does not match the number on the 132 kV SLD (4 in the BOQ and 12 in the the132 kV SLD). Please clarify. | The numbers as indicated in the BOQ are correct and are in line with SLD. | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|--|----------------------|-------------|---|--------------|-------------|----|------------------------|--|--|--|----|-------|--|----------------------|--|---|---|--|--|--|---|--------------|---|------------|--|---|---------------------------------------|----|----|--|---|----------------|--|--------------|--|--|--|--|----|--|---|--|
| 83 | | 132kV Capacitive voltage Transformer of Protection & Measuring (1-phase, three cores) for 132kV busbar. All accessories will be included to make testing and commissioning completed. | No | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 84 | 2.17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | The BOQ- PRICE SCHEDULES- Makindu BOQ-SS | <p>Schedule 1_SS</p> <table border="1"> <tr> <td>65</td><td></td><td>Surge arrester (1-phase) including surge counter with earth leakage meter connecting to earth greed All accessories will be included to make testing and commissioning completed.</td><td>No.</td><td>12</td></tr> <tr> <td>66</td><td>2.8</td><td></td><td></td><td></td></tr> <tr> <td>67</td><td></td><td></td><td></td><td></td></tr> </table> | 65 | | Surge arrester (1-phase) including surge counter with earth leakage meter connecting to earth greed All accessories will be included to make testing and commissioning completed. | No. | 12 | 66 | 2.8 | | | | 67 | | | | | The number of Surge Arresters in the BOQ table does not match the number on the132 kV SLD (12 in the BOQ and 6 in the the132 kV SLD). Please clarify. | The numbers as indicated in the BOQ are correct and are in line with SLD. 6 Nos 132kV Surge arresters shown in Sheet 2/3 ,DWG NO:SL61MKD=A000 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | | Surge arrester (1-phase) including surge counter with earth leakage meter connecting to earth greed All accessories will be included to make testing and commissioning completed. | No. | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Part 2 - Appendix A – TDS Drawings-SS-1_SLDs-KEY SLD-2_132kV | <p>4.12 132 kV LOW POWER INSTRUMENT TRANSFORMER LPIT –OIL FEEDER</p> <table border="1"> <thead> <tr> <th>S.No</th><th>Description</th><th>Unit</th><th>Qty Required</th><th>Qty Offered</th></tr> </thead> <tbody> <tr> <td>1</td><td>Instrument Transformer</td><td></td><td></td><td></td></tr> <tr> <td>2</td><td>Ratio</td><td></td><td>Optical output 14500</td><td></td></tr> <tr> <td>3</td><td>Make up</td><td></td><td></td><td></td></tr> <tr> <td>4</td><td>Rated output</td><td>A</td><td>up to 2000</td><td></td></tr> <tr> <td>5</td><td>Short-circuit current capability (kA)</td><td>kA</td><td>45</td><td></td></tr> <tr> <td>6</td><td>Accuracy class</td><td></td><td>SEC 1P, 1000</td><td></td></tr> <tr> <td></td><td></td><td></td><td>1%</td><td></td></tr> </tbody> </table> | S.No | Description | Unit | Qty Required | Qty Offered | 1 | Instrument Transformer | | | | 2 | Ratio | | Optical output 14500 | | 3 | Make up | | | | 4 | Rated output | A | up to 2000 | | 5 | Short-circuit current capability (kA) | kA | 45 | | 6 | Accuracy class | | SEC 1P, 1000 | | | | | 1% | | Parameters for LPIT in TDS are As shown on the diagram do not match the parameters on the 132 kV SLD. Please clarify. | <p>Optical sensor offers a wider operating range in comparison with conventional CTs, depending on the manufacturer it might be from 1-4000A or 50-2500A, in this case both are fulfilling the requirements.</p> <p>For clarity use a minimum requirement as 50-2500A, Class 5P/5PTE</p> <p>Refer to Bid document Part 2 Appendix-A-TDS section 4.12</p> |
| S.No | Description | Unit | Qty Required | Qty Offered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Instrument Transformer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Ratio | | Optical output 14500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Make up | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Rated output | A | up to 2000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Short-circuit current capability (kA) | kA | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Accuracy class | | SEC 1P, 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

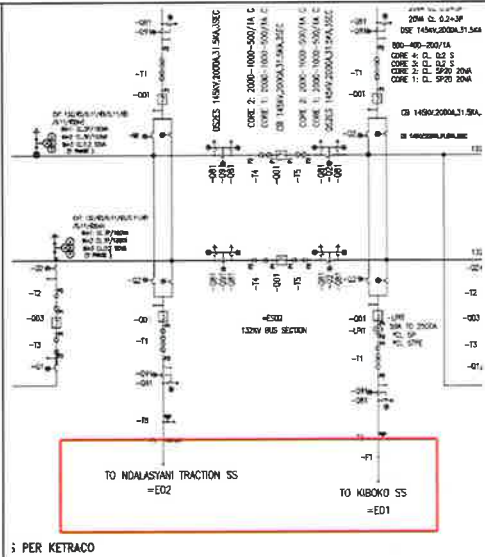
MEN

| | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---------------|--------------------------------------|--|--|-----|---|--|--|-------|---|-----|---|-------|-------------|------|---------------|--------------|---|-------------------------------------|--|--|--|---|------------------|--|--|--|---|------|--|--|--|---|--|
| 20 | <p>The BOQ- PRICE SCHEDULES- Makindu BOQ-SS</p> <p>Part 2 - Appendix A – TDS</p> <p>Drawings-SS-1_SLDS-KEY SLD-1_400 kV</p> | <p>Schedule 1_SS</p> <table><tr><td>3</td><td>Power Transformer and Busbar Reactor</td><td></td><td></td></tr><tr><td>3.1</td><td>INTERBUS TRANSFORMER (IBT - Three windings)</td><td></td><td></td></tr><tr><td>3.1.1</td><td>Three phase units with three windings 400/132/11kV, 75/90 MVA (ONAN/ONAF) including HV/LV/TV/Neutral CT's & Bushing CTs</td><td>No.</td><td>2</td></tr></table> <p>§ 90/90/10MVA; YNYND11; 400/132/11KV THREE WINDING TRANSFORMERS (AIS)</p> <table><tr><th>S.No.</th><th>Description</th><th>Unit</th><th>Data Required</th><th>Data Offered</th></tr><tr><td>1</td><td>Manufacturer & Place of manufacture</td><td></td><td></td><td></td></tr><tr><td>2</td><td>Type designation</td><td></td><td></td><td></td></tr><tr><td>3</td><td>Type</td><td></td><td></td><td></td></tr></table> | 3 | Power Transformer and Busbar Reactor | | | 3.1 | INTERBUS TRANSFORMER (IBT - Three windings) | | | 3.1.1 | Three phase units with three windings 400/132/11kV, 75/90 MVA (ONAN/ONAF) including HV/LV/TV/Neutral CT's & Bushing CTs | No. | 2 | S.No. | Description | Unit | Data Required | Data Offered | 1 | Manufacturer & Place of manufacture | | | | 2 | Type designation | | | | 3 | Type | | | | <p>parameters for IBT in TDS are as shown on the diagram do not match the parameters on the 400 kV SLD, neither on match in the BOQ. Please clarify</p> | <p>The power transformer is 400/132/11 kV, 75/90/10 MVA , ONAN/ONAF.</p> <p>Specification and requirements as indicated in the Bid Document Part 2- Appendix A TDS clause 5 shall apply.</p> |
| 3 | Power Transformer and Busbar Reactor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1 | INTERBUS TRANSFORMER (IBT - Three windings) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.1 | Three phase units with three windings 400/132/11kV, 75/90 MVA (ONAN/ONAF) including HV/LV/TV/Neutral CT's & Bushing CTs | No. | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S.No. | Description | Unit | Data Required | Data Offered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Manufacturer & Place of manufacture | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Type designation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | |
|-----|---|---|-----|--|-----|---|--|--|
| | |  | | | | | | |
| 21 | <p>The BOQ- PRICE SCHEDULES- Makindu BOQ-SS</p> <p>Drawings-SS-1_SLDS-KEY SLD-2_132kV</p> | <p>Schedule 1_SS</p> <table border="1"><tr><td>4.7</td><td>Update the remote substations drawings (Baba/Mariakani and Isinya)</td><td>Lot</td><td>1</td></tr></table> | 4.7 | Update the remote substations drawings (Baba/Mariakani and Isinya) | Lot | 1 | <p>1. The names of the counterparts in the BOQ do not match the descriptions in the SLD and Part 2 of the tender document. Please clarify the exact number of stations for each counterpart.</p> <p>2. Has the 400KV and 132KV line protection, measurement and control devices of the counterpart terminal station been configured, and if so, will the optical differential protection in this phase be based on the existing devices at the counterpart station, or will all devices be replaced with new ones? Please clarify.</p> | <p>1. The remote end stations for 400 kV is Isinya 400 kV and Mariakani 400 kV. The remote end stations for 132 kV is 132kV Mtito- A- Ndei substation and 132 kV KPC(Kenya Pipeline Company) Sultan substation</p> <p>2. Yes, the line protection on the remote end stations for both 400kV and 132 kV have been configured. Please refer to the bid document Part 2, Section 3 clause 13 that defines the scope of works in regards to protection systems. The bidder has the responsibility for design and ensuring that their solution meets the technical requirements in the bid documents.</p> |
| 4.7 | Update the remote substations drawings (Baba/Mariakani and Isinya) | Lot | 1 | | | | | |

MEN

Part 2



; PER KETRACO

- k) Required facility for interconnection between the OPGW and optical fibre cable (including joint box, splicing, termination at the pylon, etc.) and end-to-end (OTDR, ACIR) & (MTR) and cure-waiting facilities and preparing the as-built documents.
 - l) Tests, and in- and out-testing, commissioning, and training.
 - m) Complete and functional system integration to the existing power and relaying but not with:
 - * Modification of remote and statuses of 400 kV Marakani-Iskara line. This will include modification of panel names, protection settings, testing of the modified line, SCADA and power flow testing by the LLEO of this line into Marakani substation.
 - * Modification of remote and statuses of 132kV Jib-Iskara line from Marakani substation. This will include modification of panel names, protection settings, testing of the modified settings, SCADA and all works related to the LLEO of this line into Marakani substation.
- 2.2 110kV connection of existing 400kV Mombasa-Nairobi (Iskara-Marakani) Double Circuit OPWL**

men

| | | | | |
|----|-----------------------------------|--|---|---|
| 22 | General | Geological survey | <p>Would you kindly be in a position to share preliminary geological survey? Resistivity is also not clear for calculation/design of grounding</p> | <p>No geological survey reports are available. It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. KETRACO can facilitate the visits upon request.</p> |
| 23 | Part 1: Section IV. Bidding Forms | <p>Technical Proposal</p> <ul style="list-style-type: none"> - Site Organization - Method Statement - Mobilization Schedule - Construction Schedule - Plant - Contractor's Equipment - Personnel | <p>For Plant:</p> <p>For "Plant", we understand that only "Form FUNC" needs to be submitted. TDS should be submitted separately and doesn't need to be included in "Plant".</p> <p>Please confirm..</p> | <p>Follow the bid document requirements.</p> |

| | | | | |
|----|-----------------------------------|--|---|---|
| 24 | Part 1: Section IV. Bidding Forms | Letter of Bid Schedule of Rates and Prices | Based on Bidding Documents, "Letter of Bid" and "Schedule of Rates and Prices" need to be signed. We understand that these files are not compulsory to be stamped. Please confirm. | Please refer to ITB 21.2 |
| 25 | Makindu BOQ- LILO | 8.2.3 Communication for the engineers and the client (as per Section 4.5) | We understand the "communication" only refers to mobile phone. Please confirm. | Yes, Communication refers to Mobile phone and the associated monthly charges as per Bid document Part 2, Section 2 clause 4.5 |




MEV

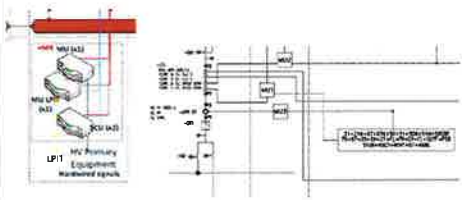
| | | | | |
|----|-----------------|---|--|---|
| 26 | Makindu BOQ- SS | 16.5 Gas Handling Trolley including accessories | Please clarify what gas is the Trolley handling? | <p>The mobile gas handling plant for filling, evacuating, and processing the SF6 gas in the switchgear, to be supplied as part of the Contract to enable any maintenance work to be carried out and shall be as specified in the schedules.</p> <p>The gas handling plant shall include all the necessary storage tanks or cylinders for temporarily storing the evacuated SF6 gas as well as spare gas for maintenance purposes and shall be suitable for transportation on public roads.</p> <p>The capacity of the temporary storage facilities shall be at least sufficient for storing the maximum quantity of gas that could be removed when carrying out maintenance or repair work on the switchgear.</p> <p>The plants provided shall be suitable for evacuating and treating the SF6 gas by the use of desiccants, driers, filters etc to remove impurities and degradation products from the gas. This shall comply with IEC 60480. The capacity of the plant shall be such that a circuit breaker can be evacuated in less than half one hour.</p> <p>The plant shall also be capable of reducing the gas pressure within a</p> |
|----|-----------------|---|--|---|




| | | | | |
|----|-----------------|---|--|---|
| | | | | circuit breaker to a value not exceeding 8 millibars within two hours. It shall be capable of operating satisfactorily in the temperature range up to +50°C |
| 27 | Makindu BOQ- SS | 17.3.1 Training on the Site: 17.3.1.6 Solar water heating system | <p>In item 17.3.1.6, there is the training for “solar water heating system”. However, we can’t find the equipment of “solar water heating system” in BOQ. We’d like to know:</p> <p>1. Whether “solar water heating system” needs to be supplied for this project?</p> <p>2. If yes, under which item should it be listed?</p> | <p>1. Yes, Solar water heating is required in this project as detailed in Bid document Part 2, Section 3 clauses 27.21.3, 27.21.8, 27.25.1, 27.25.2, 28,4 and 28.13.</p> <p>2. This is included in Item nos 12.19.6 and 12.21.6 in the Makindu BOQ-SS</p> |

men

| | | | | |
|----|---|---|--|---|
| 28 | Part 1: Section IV. Bidding Forms | <p>Form FIN-3.3 Financial Resources</p> <p>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)</p> | The line of credit is valid until 31 st October 2024. Please confirm whether the credit line certificate is qualified? | Note that in Bid document Part 1, Section III, Evaluation and Qualification Criteria, clause 2.2 , Financial Resources, this is indicated as Not Applicable hence the relevant FIN forms will not apply. |
| 29 | 2.1 Makindu 400/132 kV digital substation | <p>m) Complete and functional system integration to the existing power grid including but not limited to:</p> <ul style="list-style-type: none"> Modification of remote end stations of 400 kV Mariakani- Isinya line. This will include modification of panel names, protection settings, testing of the modified settings, SCADA and all works related to the LILO of this line into Makindu. <p>Modification of remote end stations of 132kV Juja- Rabai line from Makindu substation. This will include modification of panel names, protection settings, testing of the modified settings, SCADA and all works related to the LILO of this line into Makindu.</p> | <ol style="list-style-type: none"> Please provide relevant information about the 132kV opposite stations(Jujia substation and Rabai substation) , such as the protection manufacturer and configuration details. Do you accept the solution of adding a new differential protection at the remote station to work in coordination with the differential protection at the newly constructed station? If so, please provide relevant information about the remote station (e.g., availability of spare | <ol style="list-style-type: none"> The remote end stations for the 132 kV line from Makindu are Mtito- A-Ndei substation and KPC(Kenya Pipeline Company) Sultan substation. Note it is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the above substations and verify details of the protection manufacturer and other information. KETRACO can facilitate the visits upon request. This is an EPC contract and the bidder is free to implement the design they see fit as long as it is in line with the technical requirements as stipulated. It is the bidder's responsibility to conduct due diligence and collate required information. |

| | | | | |
|----|-----------------------------------|---|---|--|
| | | | panel space, drawings, etc) | |
| 30 | 23.8.5 Combined | <p>MUs/SCUs devices</p> <p>With aim to reduce the number of devices in the substation, it is possible to use combined devices with SAMU and SCU functionalities, in that case the device shall fulfil the requirements stated for both functions as described above</p> | <p>If we have a combined MU and SCU device, can we configure the MU and SCU according to our own plan, instead of the configuration required by the technical specifications? For example, configuring the 400kV section as per the specifications, but using the combined MU and SCU device in the 132kV section. Please confirm</p> | <p>As described in Bid document Part 2, Section 3 clause 23.8.5, It is possible to use both SAMU and SCU or combined MUs/SCU. It is acceptable to use SAMU at 400kV and combined MU/SCU at 132kV side, as long it is not combining signals from Main 1 and Main 2 protection systems</p> |
| 31 | 132 kV PSLD Configuration Diagram | <p>In the protection SLDs of the tender document drawings (7. 132 KV OHL FEEDER WITH LPIT CT)</p> <p>The MU configuration diagram for the 132kV outgoing line with LIPT is inconsistent with the overall system configuration diagram.</p>  | <p>1. Please confirm the number of MU configurations for the 132kV bay with LPIT. Is it 2 sets or 3 sets?</p> <p>2. The distance protection is receiving signals from both the conventional CT MU and the LPIT MU. How should the protection select which signal to use? Is it possible to only connect the LPIT MU?</p> | <p>1. As described in 132 kV Protection SLD Drawing no 7, Note 5: MU3 is actually part of LPIT and not a merging unit like others. The 132 KV OHL FEEDER WITH LPIT CT shall include:</p> <ul style="list-style-type: none"> • 1 MU and SCU for protection main 1 • 1 MU and SCU for protection main 2 • 1 LPIT (currents) and its corresponding proprietary interface (MU) for Main 1 (distance protection relay) <p>2. As mentioned in System Architecture Drawing, Note c) LPTI will be used in parallel to conventional CTs/VTs and MU for</p> |



| | | | | |
|----|---|--|---|---|
| | | | | <p>132kV OHL. It is a trial of LPIT technology KETRACO wants to evaluate, so the bay shall be capable of selecting currents from conventional CT or from LPITs (LPTIs as default option). It is desired that the current source is selectable via settings groups or from display, and the protection should switch over between current sources automatically in case of failure.</p> <p>Please find revised price schedules Makindu BOM</p> |
| 32 | <p>2.2 LILO connection of existing 400kV Mombasa-Nairobi (Isinya-Mariakani) Double Circuit OHL</p> | <p>o) Update the SAS for adjoining substations and NCC SCADA system to integrate new topology.</p> | <p>Please provide relevant information about the adjoining substations and NCC SCADA system</p> <ul style="list-style-type: none"> Please confirm whether the adjoining substation and the NCC SCADA system integration involve license and authorization. | <p>It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the remote end substations and verify details of the SCADA/SAS manufacturer and other information. KETRACO can facilitate the visits upon request.</p> |

| | | | | |
|----|----------------------------|----------------------------|---|--|
| 33 | Price schedule and drawing | Price schedule and drawing | As per bidding drawing" Lilo-arrangement", the bypassing scope for 400kV DC line is from KET-706 to KET-710, 132kV SC line is from Tower 580-Tower586, please confirm if the bypassing BOQ should be detailed based on this scope or not. | The bidder shall refer to the bidding documents for the scope of the work. In addition all the Bidders were taken to the respective locations during site visit where the scope was further highlighted. |
| 34 | | | Please provide the existing 400kV and 132kV tower type, loads, outline drawings and fabrication drawings to estimate the bypassing feasibility and reinforcement for the existing tower. | It is in the scope of the bidder to estimate all the required loads and drawings. |

| | | | | |
|----|--------|--|---|--|
| 35 | TDS | | As per item 26.1, TDS, the basic wind pressure was specified for 400kV line components, but in 132kV TDS, there is no basic wind pressure specified, please clarify if these specified basic wind pressures were suitable for 132kV line or not, if not, please provide the basic wind pressure for 132kV line. | The bidder shall calculate the wind pressure from the specified wind speeds and associated parameters in Bid document Part 2 Section 3 clause 27.5.5 Wind loads (section 3) Employers requirements |
| 36 | TDS | | As per table 26, TDS, the dimensions of suspension tower were specified, please clarify if these dimensions can be adjusted as per bidder's design. | The dimensions provided are for bidding purposes only. The final design to be adopted shall be the responsibility of the winning bidder. |
| 37 | Part 2 | | As per section 8.2, OHTL specification in part 2, the tower steel should be S235JR and S355J0 as per EN10025-2, please clarify if the steel material can be acceptable with GB standards and the steel can be Q235B, Q355B and Q420B which are almost the same with EN10025. | Refer to Bid document part 2 section 4 clause 8.2 material which is explicit on material requirements. |
| 38 | Part 2 | | As per 4.14.4, OHTL specification in part 2, the bird guards and bird flight diverters were specified for the line, but the scope of these was not included in BOQ, please clarify if these were needed or not, if needed, please provide installation scope. | Bird guards shall be deemed to be included in the price of the tower while the bird flight diverters shall be deemed to be included in the price of the conductor/earthwire |

MEN

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|--|---|-------|--|-----|----|--|---|-----|---|-----|--|-----|---|--|--|-----|---|-----|--------------------------------------|-----|---|-----|--|-----|---|--|--|
| 39 | B.O.Q - Price Schedules:Makindu BOQ-SS | <table><tr><td>1.13</td><td>Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed - Phase summation galvanized junction box will be provided</td><td>No.</td><td>24</td></tr></table> | 1.13 | Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed - Phase summation galvanized junction box will be provided | No. | 24 | Pls kindly confirm the Qty of 400KV CVT is correct or not; | The quantity of 400 kV CVT as indicated in the BOQ is correct. | | | | | | | | | | | | | | | | | | | | |
| 1.13 | Capacitive voltage transformer - (Protection & Measuring, 1-phase) Supply will be based on TDS and description. All accessories will be included to make testing and commissioning completed - Phase summation galvanized junction box will be provided | No. | 24 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | B.O.Q - Price Schedules:Makindu BOQ-SS | <table><tr><td>4.5</td><td>Modification works in remote substation Rabai or Mariakani & Isinya Substation. Including relay setting & relay configuration etc.</td><td>Lot</td><td>1</td></tr><tr><td>4.6</td><td>Miscellaneous modification works as necessary to make the complete 400kV protection system functional</td><td>Lot</td><td>1</td></tr><tr><td>4.7</td><td>Update the remote substations drawings (Rabai/Mariakani and Isinya).</td><td>Lot</td><td>1</td></tr></table> | 4.5 | Modification works in remote substation Rabai or Mariakani & Isinya Substation. Including relay setting & relay configuration etc. | Lot | 1 | 4.6 | Miscellaneous modification works as necessary to make the complete 400kV protection system functional | Lot | 1 | 4.7 | Update the remote substations drawings (Rabai/Mariakani and Isinya). | Lot | 1 | Pls kindly confirm if there's any other works related to the modification work of remote substations of Rabai, Mariakani, Isinya substation, except the relay settings and configurations. | Please refer to Bid document part 2 Section 1 clause 2.1 | | | | | | | | | | | | |
| 4.5 | Modification works in remote substation Rabai or Mariakani & Isinya Substation. Including relay setting & relay configuration etc. | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.6 | Miscellaneous modification works as necessary to make the complete 400kV protection system functional | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.7 | Update the remote substations drawings (Rabai/Mariakani and Isinya). | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | B.O.Q - Price Schedules:Makindu BOQ-SS | <table><tr><td>5.1.5</td><td>Modification works at the remote end substations from Makindu substation including relay setting calculations & relay configuration & testing</td><td>lot</td><td>1</td></tr></table> | 5.1.5 | Modification works at the remote end substations from Makindu substation including relay setting calculations & relay configuration & testing | lot | 1 | <p>Please kindly confirm:</p> <ul style="list-style-type: none">- If it is repeating with the upper items of 4.5, 4.6, 4.7;- Please kindly clarify if there's others works except the relay settings and configurations, and testing; | <p>4.5,4.6 & 4.7 are for the 400kV remote end stations & 5.1.5 is for 132kV remote end stations.</p> <p>Please refer to Bid document part 2 Section 1 clause 2.1. Updating of the remote end stations drawings is also to be included as part of the scope.</p> | | | | | | | | | | | | | | | | | | | | |
| 5.1.5 | Modification works at the remote end substations from Makindu substation including relay setting calculations & relay configuration & testing | lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | B.O.Q - Price Schedules: Makindu BOQ- SS | <table><tr><td>7.4</td><td>Incorporate new and modified substation equipment into the SCADA/EMS System at the NCC/RCC.</td><td>Lot</td><td>1</td></tr><tr><td>7.5</td><td>Modifications to NCC/RCC databases and applications</td><td>Lot</td><td>1</td></tr><tr><td>7.6</td><td>Update of the Geographic Map</td><td>Lot</td><td>1</td></tr><tr><td>7.7</td><td>Modifications to NCC/RCC operator displays</td><td>Lot</td><td>1</td></tr><tr><td>7.8</td><td>Modifications to NCC/RCC mimic board</td><td>Lot</td><td>1</td></tr><tr><td>7.9</td><td>Modification of Remote end Substation Telecommunication System</td><td>Lot</td><td>1</td></tr></table> | 7.4 | Incorporate new and modified substation equipment into the SCADA/EMS System at the NCC/RCC. | Lot | 1 | 7.5 | Modifications to NCC/RCC databases and applications | Lot | 1 | 7.6 | Update of the Geographic Map | Lot | 1 | 7.7 | Modifications to NCC/RCC operator displays | Lot | 1 | 7.8 | Modifications to NCC/RCC mimic board | Lot | 1 | 7.9 | Modification of Remote end Substation Telecommunication System | Lot | 1 | <p>Please kindly confirm:</p> <ul style="list-style-type: none">- After the construction of Makindu substation and connection with the OHTL, the substation is accessed to NCC by the OPGW or FO;- Please kindly offer the band/manufacturer/type/model of the SCADA/EMS/Telecommunication system in NCC/RCC; | <ul style="list-style-type: none">- Refer to the scope of works Bid document part 2 Section 1 clause 2.2 and 2.3 on OPGW works and Bid document part 2 Section 3 clause 22.3.2 on Remote access of NCC.- The NCC/RCC, SCADA/EMS model/manufacturer is ABB |
| 7.4 | Incorporate new and modified substation equipment into the SCADA/EMS System at the NCC/RCC. | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.5 | Modifications to NCC/RCC databases and applications | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.6 | Update of the Geographic Map | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.7 | Modifications to NCC/RCC operator displays | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.8 | Modifications to NCC/RCC mimic board | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.9 | Modification of Remote end Substation Telecommunication System | Lot | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |


| | | | | |
|----|---|--|---|---|
| 43 | Part 2 12.3 Type Tests, Reports and Certificates | The contractor shall provide detailed type test reports for equipment certified by an approved laboratory affiliated with international organizations who is a member of the Short-Circuit Testing Liaison (STL) proving the successful passing of such tests where applicable. Type test with relevant certificate shall not be older than 5 years. | <p>1. Do you accept type test reports from ILAC member laboratories or other laboratories of the same grade?</p> <p>2. Do you accept type test reports for similar equipment models of the same grade which the manufacturer already has, or type test reports for models with larger specifications, which means allowing larger capacity reports replace the smaller ones?</p> <p>3. Do you accept type test report witnessed by STL members?</p> | <p>1.Type test reports from an accredited laboratory independent from the manufacturer is acceptable.</p> <p>2.Type test reports to be submitted as the requirements in the bid documents</p> <p>3. Yes</p> |
| 44 | Part 1 | Section II. Bid Data Sheet | <p>2.2 Financial Resources – Not Applicable</p> <p>Using the relevant Forms No FIN-3.3 and FIN-3.4 in Section IV, Bidding Forms, the Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: (I) the following cash-flow requirement: and (ii) the overall cash flow requirements for this contract and its current works commitment.</p> <p>At present we presumed that financial resources FIN- 3.3 &</p> | Note that in Bid document Part 1, Section III, Evaluation and Qualification Criteria, clause 2.2 , Financial Resources, this is indicated as Not Applicable hence the relevant FIN forms will not apply. |

| | | | | |
|----|--------|---|--|--|
| | | | 3.4 Form are not applicable for evaluation purpose. Kindly Confirm. | |
| 45 | Part 2 | 3.4 420 kV, 4000-2000-1000/1A, CURRENT TRANSFORMER-DIAMETER CT-LINE | Please confirm qty. for Post type current transformer for measuring and protection purpose of 400KV line. As there is discrepancy qty. SLD Shows 36 Nos. and BOM Shows 24 Nos. Please confirm that Client Considered two Core or Three Core for CT of 400 KV Lines. | There is no discrepancy between the SLD and the BOQ. The quantity as indicated in the BOQ is correct. Number of cores is per as indicated in the SLD and Bid Document Part 2-Appendix A-TDS. |
| 46 | Part 2 | 3.5 420 kV, 4000-2000-1000/1A, CURRENT TRANSFORMER-DIAMETER CT- TRANSFORMER | Please confirm Range of CT for Transformer measuring and Protection Purpose. As there is discrepancy in Range of CT shown by SLD and GTP. Please confirm Nos. of Core on secondary side because SLD Shows 2 Core with Class X Protection and GTP Shows 3 Core. Please confirm. | There is no discrepancy between the SLD and the GTP. Number of cores and class is per as indicated in the SLD and Bid Document Part 2-Appendix A-TDS. |
| 47 | Part 2 | 3.6 420 kV, 4000-2000/1A, CURRENT TRANSFORMER – (METERING CT) | There is discrepancy in GTP and SLD ratings of Current Transformer for Metering CT. Please confirm which range is considered. GTP Shows CT Metering Rating of Line not for Transformer Metering Rating. | There is no discrepancy between the SLD and the GTP. |



| | | | | |
|----|--------|---|--|---|
| 48 | Part 2 | 3.8 420 kV CAPACITIVE VOLTAGE TRANSFORMER- (METERING) | At present we presumed that T5 CVT is for Metering Purpose as shown in SLD. It has two Core and will be installed in each line. So, its qty. to be 8 Nos. instead of 6 Nos. mentioned in BOM Sr. No. 1.14. Please confirm. | The quantity indicated in the BOQ is correct. The quantity in the line item 1.14 is not 6 numbers as quoted. |
| 49 | Part 2 | 3.7 420 kV CAPACITIVE VOLTAGE TRANSFORMER | As shown in SLD and as mentioned in GTP that T6 and T7 CVT have three Core and will be installed in each line. So, its qty. to be 24 Nos. instead of 20 Nos. mentioned in BOM Sr. No. 1.13. Please confirm. | The quantity indicated in the BOQ is correct. |
| 50 | Part 2 | 4.2 145 kV,2000A, 31.5kA-3 sec, CIRCUIT BREAKER | As there is discrepancy in SLD and GTP rating for Circuit Breaker of Bus Coupler. As SLD Shows it's rating for Q2 and Q1: 145KV, 3150A, 31.5KA, 3 Sec and GTP Shows it Rating 2000A. Please confirm its Rating. | 2000A rating is to be used. Specification and requirements as indicated in the Bid Document Part 2- Appendix A TDS clause 4.2 shall apply. |
| 51 | Part 2 | 3. 4.3 145 kV,2000A, 31.5kA-3 sec, DISCONNECT SWITCH | As shown in SLD Current rating of Disconnect switch for Bus Coupler is 3150A and for OHL 132KV Line and for IBT is rating is 2000A. However, GTP Shows Rated Current 1100A. Please confirm which rating is to be considered. | 2000A rating is to be used. Find the revised technical data sheets item 4.3 in Addendum 1 |
| 52 | Part 2 | Section 1 Preliminaries 4. Service Condition | In Part 2 Technical Specification Altitude differ of each products. | For all switchyard and LILO equipment and works refer to Bid document Part 2, Section 1 clause 4 for the altitude to be used. |

MEN

| | | | | |
|----|--------|--|---|---|
| | |  | Please confirm which altitude level considered for design. | For ERS equipment and works refer to Bid document Part 2, Section 5 clause 2.3 for the altitude to be used. |
| 53 | Part 2 | 6. 4.6 120kV, 10kA, CLASS-3, SURGE ARRESTER WITH DISCHARGE COUNTER | As shown in 132KV single line diagram Quantity of surge arrester is 6 Nos. While BOM Shows Qty. is 12 Nos. Please Confirm. | The numbers as indicated in the BOQ are correct and are in line with SLD. 6 Nos 132kV Surge arresters shown in Sheet 2/3 ,DWG NO:SL61MKD=A000 |
| 54 | Part 2 | 4.9 132kV CURRENT TRANSFORMER (OHL FEEDERS) | As shown in SLD and GTP if Current Transformer has 4 Cores then its required Qty. is 8 Nos. instead of 6 Nos. Please Confirm. | The numbers as indicated in the BOQ are correct. |
| 55 | Part 2 | 4.10 132 kV CURRENT TRANSFORMER (IBT FEEDERS) | As shown in SLD and GTP if Current Transformer has 4 Cores then its required Qty. is 8 Nos. instead of 6 Nos. Please Confirm. | The numbers as indicated in the BOQ are correct. |
| 56 | Part 2 | 4.11 132 kV CURRENT TRANSFORMER -BUS SECTIONBUS COUPLER FEEDERS | As Shown in BOM Sr. No. 2.16 Shows its qty. is 24 Nos. while SLD Shows its qty. is 16 Nos. Please confirm. | The numbers as indicated in the BOQ are correct. |
| 57 | Part 2 | 4.7 132 kV CAPACITOR VOLTAGE TRANSFORMER –CVT1 | As Shown in BOM Shows Sr.no. 2.17 Shows qty. to be 4 Nos. while as per | The numbers as indicated in the BOQ are correct. |



men

| | | | | |
|----|--------|--|--|---|
| | | | SLD it's required Qty. is to be 12 Nos. Please Confirm. | |
| 58 | Part 2 | 4.8 132 kV CAPACITOR VOLTAGE TRANSFORMER -CVT2 | There is discrepancy in CVT-2 Burden rating for High Accuracy metering. SLD Shows (i.e.T5) 20VA CI 0.2+3P/20VA CI 0.2+3P/20VA CI 0.2+3P. While, GTP Shows Winding Accuracy is 0.2/50VA/0.2/50VA/3P/100VA and Burden Simultaneous on each winding 50/50/100 VA. Please confirm. | The correct class and burden for winding 1/2/3 is 0.2/50VA, 0.2/50VA and 3P/100VA. Specification and requirements as indicated in the Bid Document Part 2- Appendix A TDS clause 4.8 shall apply. |
| 59 | Part 2 | 4.12 132 kV LOW POWER INSTRUMENT TRANSFORMER LPIT –OHL FEEDER | There is discrepancy in rating as mentioned in SLD and GTP of LPIT.SLD Shows rating of LPIT is 50A to 2500A and GTP Shows rated current 1A to 4000A. As mentioned in GTP its accuracy class is IEC 5P, IEEE 10% and as per SLD its accuracy class is 5P and 5TPE. Kindly Confirm. | Optical sensor offers a wider operating range in comparison with conventional CTs, depending on the manufacturer it might be from 1-4000A or 50-2500A, in this case both are fulfilling the requirements. For clarity use a minimum requirement as 50-2500A, Class 5P/5PTE Refer to Bid document Part 2 Appendix-A-TDS section 4.12 |
| 60 | Part 2 | 5 909010MVA; YNYN0D11; 40013211KV THREE WINDING TRANSFORMERS (AIS) | There is discrepancy in SLD and GTP rating CT Ratio required for Power Transformer. GTP Shows CT Ratio is 400-200/1A and 1000-500-250/1. And Class is 5P20/50VA for each core. While SLD Shows CT Ratio rating is T11: 400-200/1A Core 1, 2, 3: 5P20VA and T12 Shows: 1000-500-250/1A Core 1: 5P20 20VA and Core 2: CLX Uk>500V. | Please follow what is indicated in Bid Document Part 2 -Appendix A- TDS item 5 |

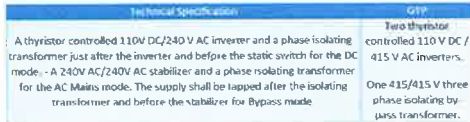
| | | | | |
|----|--------|---|--|---|
| 61 | Part 2 | 5 909010MVA; YNYN0D11; 40013211KV THREE WINDING TRANSFORMERS (AIS) | As mentioned in GTP is there any requirement of protection Class X and PX for Neutral Current Transformer. As shown in SLD there is no requirement of Class x Protection for Neutral CT. | Please follow what is indicated in Bid Document Part 2 -Appendix A- TDS item 5 |
| 62 | Part 2 | 5 909010MVA; YNYN0D11; 40013211KV THREE WINDING TRANSFORMERS (AIS) | As mentioned in GTP tells us that required Type Test Certificate not older than 4 Years. While, in Section 3 Evaluation and Qualification Criteria Client asks Type test Certificate not older than 5 Years. Please confirm. | The type test reports should be conducted within the last 7 years prior to the date tender submission Find the revised Part 1 Section II Bid data sheet 11.1 and revised Part 1 Section III clause 2.5 in Addendum 1. |
| 63 | Part 2 | 6 110.415KV; 500KVA EARTHINGAUXILIARY TRANSFORMERS | As mentioned in SLD Core 1 Value of CT is 500/1A CI X Uk>750V & Core 2 Value is 500/1A CL 5P20 20VA. While GTP Shows Current ratio Protection Class for Core 2. Please confirm. | Please follow what is indicated in Bid Document Part 2 -Appendix A- TDS item 6 |
| 64 | Part 2 | 6 110.415KV; 500KVA EARTHINGAUXILIARY TRANSFORMERS | Please confirm below points for Auxiliary Transformer. At present we have not considered any recommended spare parts. Please confirm. Fault Current and Duration : 1000A/30S Zero/Positive Sequence Impedance : | Please find revised price schedules Makindu BOM for spares for transformer, reactor and auxiliary transformer in Addendum 1 |


MEU

| | | | | |
|----|--------|---------------------------------|---|---|
| 65 | Part 2 | 3. 7 400KV 50MVAR SHUNT REACTOR | Each 400KV Switchyard Equipment design for Altitude level of >1000m. While GTP Shows Altitude level 2000m. So, Please confirm. | For all switchyard and LILO equipment and works refer to Bid document Part 2, Section 1 clause 4 for the altitude to be used. |
| 66 | Part 2 | 3. 7 400KV 50MVAR SHUNT REACTOR | Technical Specification asks for performance guarantee required for Shunt Reactor, while in Evaluation and Qualification Criteria nothing mentioned for the same. Please Confirm. Is it mandatory, and if yes then please share its form Sample. (I.e. similar like Functional Guarantee Form). | Find revised Part 1, Section III Evaluation and Qualification Criteria Clause 1 and revised Part 3 Appendix 8 in Addendum 1 |
| 67 | Part 2 | 3. 7 400KV 50MVAR SHUNT REACTOR | Spare parts mentioned in technical specification. While BOM not shows any kind of spares required for Shunt reactor. Please confirm. | Please find revised price schedules Makindu BOM for spares for transformer, reactor and auxiliary transformer in Addendum 1 |
| 68 | Part 2 | 3. 7 400KV 50MVAR SHUNT REACTOR | At present we have not considered any recommended spare parts. Please confirm. | Please find revised price schedules Makindu BOM for spares for transformer, reactor and auxiliary transformer in Addendum 1 |

| | | | | |
|----|--------|--|--|--|
| 69 | Part 2 | 8 LV Service Equipment & 3.LVDC SYSTEM SLD | In SLD Shows Current rating of 110VDC Charge Current rating is 200A while in technical specification LV Service equipment shows 110vdc Battery Charger rating 250A. It's Battery Type in Technical Specification shows Nickel Cadmium or in SLD Shows both Ni-CD Battery and Lead Acid Battery. Please confirm. Please share SLD for 48VDC System and also at present we presumed Battery Charger Current rating for 48VDC is 85A. (Ni-cd) Please Confirm. | Minimum rating of 250 A for the 110V DC Charger and 85A for the 48V DC Charger is to be considered . Please refer to Bid Document Part 2 Section 3 Clause 8.2.2 Find the revised technical data sheets item 18 and item19 in Addendum 1. The technical data sheet indicate the type of battery to be supplied There are no drawings for the 48V DC System. |
| 70 | Part 2 | Inverter SLD | Please confirm below points for Inverter. DC input voltage level : 110VDC Output Voltage Level : 230VAC,50HZ,6KA for Output Phase : 1 Output Power : 4000VA for a 10hr Associated battery to be supplied : Technology : Sizing to be done: Capacity : | Please refer to Bid Document Part 2 Section 3 Clause 8.3.3 and 8.3.4 |
| 71 | Part 2 | Civil Works | Please share Soil investigation report and Hydrological and topographical site survey report. | No soil investigation, hydrological and topographical reports are available. It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. |

| | | | | |
|----|---------------------------|--|---|--|
| | | | | KETRACO can facilitate the visits upon request. |
| 72 | Part 2 - Appendix A - TDS | 4. 3.4 420 kV, 4000-2000-1000/1A, CURRENT TRANSFORMER-DIAMETER CT-LINE | As mentioned in GTP Current transformer for line need accuracy class of Core 1 is TPY. We have not found any technical data for TPY Core. Please share below details. Rated Symmetrical Short – Circuit Current Factor Kssc: Duty Cycle Consisting of For C – O Cycle : For C-0-C-0 Cycle : Rated primary time constant Tp: Rated Resistive Burden Rb : | It is the bidder's responsibility to ensure compliance to the requirements. Please refer to Bid Document Part 2 Section 3 Clause 5.4.4 and 5.4.6 |
| 73 | Part 2 - Appendix A - TDS | 6. 4.6 120kV, 10kA, CLASS-3, SURGE ARRESTER WITH DISCHARGE COUNTER | 120KV, 10KA, Class 3 Surge arrester GTP has Shown Value of Energy Dissipation Capacity is 10KJ/KV and Line Discharge Class (IEC99-4) is 3. As per IEC 99 – 4, for 10KJ/KV Energy Dissipation Capacity its discharge Class is 4. For Line Discharge Class 3 it energy Dissipation Capacity will be Approx. 7 to 8 KJ/KV. Please confirm. | Find the revised technical data sheets item 4.6, No.11 in Addendum 1 |

| | | | | |
|----|---------------------------|---|--|--|
| 74 | Part 2 - Appendix A - TDS | <p>19 48 V D.C SYSTEM</p>  | <p>Please Share SLD Diagram for 48VDC Distribution System. There is discrepancy in UPS Technical Data between Technical Specification and SLD. Please Confirm there is requirement of Single phase or three phase inverter.</p> <p>Please Confirm we have to consider UPS Battery LASM Type or Ni-CD Type. Kindly Confirm.</p> | <p>1. There is no SLD for 48 V DC distribution system. 2. Single phase inverter is required. Please refer to Bid Document Part 2 Section 3 Clause 8.3.3 and 8.3.4. Find the revised technical data sheets item 19 in Addendum 1 3. The type of battery will be as per bidder's design. This however will need to match the technical requirement and is subject to approval.</p> |
| 75 | Part 2 | <p>2.1 Makindu 400/132 kV digital substation</p> | <p>Modification of remote end stations of 400 kV Mariakani- Isinya line. This will include modification of panel names, protection settings, testing of the modified settings, SCADA and all works related to the LILO of this line into Makindu. • Modification of remote end stations of 132kV Juja-Rabai line from Makindu substation. This will include modification of panel names, protection settings, testing of the modified settings, SCADA and all works related to the LILO of this line into Makindu. – Please share existing 400KV and 132KV SCADA Details, Panel Names and Test list to be performed during Modification. Kindly Confirm.</p> | <p>It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the remote end substations and verify details of the SCADA/SAS manufacturer, panel names and other information. KETRACO can facilitate the visits upon request. Testing will be done on all modified protection settings that are required.</p> |

| | | | | |
|----|---------|---|--|---|
| 76 | Part 2 | <p>1.4 Cleaning and Painting (Other than Civil Works)</p>  <p>The chart is titled 'EQUIPMENT' and 'COLOURS (RAL designations)'. It lists RAL codes for outdoor and indoor surfaces. Outdoor surfaces include equipment, reservoirs, cabinets, panels, and furniture. Indoor surfaces include cells, panels, cabinets, and junction boxes. The chart lists the following RAL codes: Grey RAL 7038, White RAL 9003, Red RAL 3020, Brown, and White RAL 9003.</p> | Kindly Confirm Paint Shade we have to Considered as mentioned in GTP or we have to follow this chart. Both RAL Code different. For Transformer Bushing Paint shade will be as per manufacturer Standard. Please confirm. | Please refer to Bid Document Part 2 Section 3 Clause 1.4.1 and follow the requirements as indicated |
| 77 | Part 1 | Section V Eligibility in AFD-Financed Procurement | At present we presume that we can procure goods from any region of the country. Please specify restricted country if applicable. | Refer to Section V. Eligibility criteria and social and environmental responsibility, Eligibility in AFD-Financed Procurement, Clause 1. |
| 78 | Part 2 | Civil Works | Please Confirm Soil Bearing Capacity. | It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. KETRACO can facilitate the visits upon request. |
| 79 | Part 1 | Section 3 Evaluation and Qualification Criteria | Kindly Confirm if Prequalified Bidders only submit updated Financial credentials (i.e. Fin 3.3 & 3.4) for Evaluation Purpose. There is need of submit other form for evaluation Purpose. | The forms required to be submitted are indicated in Bid Document Part 1 Section III and section IV |
| 80 | General | Substation Site | Bidder would request you the provide the Geotechnical investigation report of the proposed location for our understanding on the foundation types and soil conditions. Also, please provide us | No soil investigation, geotechnical reports are available. It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. |

| | | | | |
|----|--|---|--|--|
| | | | the Topography layout for our reference and estimation purpose. | KETRACO can facilitate the visits upon request. |
| 81 | ITB 11.1 (I) | b. Results of type tests shall have been conducted within the last five years prior to the date of tender submission. The bidder shall submit contact details (Title, email and fax) of certifying laboratory. | Unless there is significant design change, manufacturers do not repeat type test reports in any specific periodic manner. Request KETRACO to accept type test reports which may be older than 5(five) years on the date of tender submission. | Accepted. The type test reports should be conducted within the last 7 years prior to the date tender submission Find the revised Part 1 Section II Bid data sheet 11.1 and revised Part 1 Section III clause 2.5 in Addendum 1. |
| 82 | ITB 17.7 | The prices quoted by the Bidder shall be fixed and firm. | Considering long validity period of 180 days, project execution schedule of 20 Months and present volatility of the metal and other capital good market, request KETRACO to kindly allow Cost Price adjustment in the contract. The bidders will propose cost-price adjustment formulas for major equipment / services as per applicable standards of the Transmission sector. Price adjustment formula is already mentioned under Section IV : Bidding Forms. | Not accepted. No price adjustment will be applicable. |
| 83 | Option A – Section III. Evaluation and Qualification Criteria (Following prequalification) - 2.1 Update of Information | The Bidder and any subcontractors shall meet or continue to meet the criteria used at the time of prequalification. Bidders who were conditionally prequalified shall meet the conditions of their prequalification to the satisfaction of the Employer at the time of submitting | We understand that bidder's who were conditionally pre-qualified shall need to fulfill the requirements of 'Pre-qualification RFQ' - Section III - Evaluation and Prequalification Criteria no. 1.1 to 5.4 | All prequalified bidders have to meet the requirements in the bid document Part 1, section III in addition to the condition(s) for their prequalification. |



MEN

| | | | | |
|----|---|--|--|--|
| | | their bids. Failure to comply will result in disqualification from the bidding process and their bids rejected as non-responsive. | | |
| 84 | 2.5 Subcontractors / manufacturers | Subcontractors / manufacturers for the following major items of supply or services must meet the following minimum criteria, herein listed for that item: | Nos. of years of manufacturing experience mentioned for major equipment like 400 kV, 132 kV switchyard equipment, Power transformer, control protection, substation automation systems, communications systems - the required experience is from the OEM's global experience or the experience of the specific manufacturing unit from where the equipment will be supplied for the subject project. | Refer to bid document part 1, section III clause 2.5. This refers to the manufacturer/subcontractor that will supply the equipment or perform the works. |
| 85 | Section IV. Bidding Forms | Bidders Qualification following Prequalification | We understand for the bidder who is already qualified, only FORM 3.3 & FIN 3.4 to be included under bidding forms if there is any update from the pre-qualification stage. Submission of no other bidding Form is necessary. - Please confirm. | Note that in Bid document Part 1, Section III, Evaluation and Qualification Criteria, clause 2.2 , Financial Resources, this is indicated as Not Applicable hence the relevant FIN forms will not apply. |
| 86 | PC 14. Taxes and Duties and d) Tax exemption | a) All the materials, equipment and plant which will be incorporated into the permanent works are (unless exempted) subject to Import Duty, Import Declaration | As per d) Tax exemption, we understand that this project is exempted from Import duty, IDF, | Tax exemption is applicable on taxable goods and services imported or purchased locally for direct and exclusive use in the implementation of |

| | | | | |
|----|---|---|--|--|
| | | Fee (IDF), Railway Development Levy and Value Added Tax. | Railway development Levy and VAT - Kindly confirm. | official aid funded projects. Exemption is applicable for VAT as provided for under the First Schedule to the VAT Act 2013. Other exemptions include exemption from Railway Development Levy (RDL), Customs Duties and IDF Fees. |
| 87 | Part 2 27.16.1 Outdoor cable trenches | Cables of different voltage levels shall be laid in separate trenches respectively and shall be installed on separate cable trays. Installation of cable trays shall be mandatory for all cable trenches. | 1. Whether cables of different voltage levels could be laid in the same trench? 2. Could the cables be laid by bracket and not cable tray? | 1. Please follow Employer's Requirements Bid Document Part 2 ,Section 3 clause 27.16.1 2. Cable brackets are not acceptable. |
| 88 | Part2: 5.7.9 Power Transformers Tests 12.3 Type Tests, Reports and Certificates | | In Part 2, the requirements of type test report for specific equipment are inconsistent with the requirements of type test report in Clause 12.3. We understand that requirements of the type test report for specific equipment prevail. Please confirm. | The type test reports should be conducted within the last 7 years prior to the date tender submission Find the revised Part 1 Section II Bid data sheet 11.1 and revised Part 1 Section III clause 2.5 in Addendum 1. |
| 89 | BDS 17.7 The prices quoted by the Bidder shall be fixed and firm. | | 1. The quantities in the Price Schedule in the Contract are estimated. The Contractor will be paid for the quantities actually delivered and/or executed, as approved by the Engineer. No changes in the unit prices quoted in the Price Schedule in the Contract shall be considered. | Refer to Section I. Instructions to Bidders, clause 17.8. |

| | | | | |
|----|--|--|---|--|
| | | | 2. We understand it is a unit price contract, not a lump sum contract. Please confirm. | |
| 90 | Makindu BOQ- SS 12.33 Water system with automatic controls as detailed in clause 41.33.7.1.2 | | There's no clause 41.33.7.1.2 in Part 2 Employer's Requirements. Please inform what it refers to and its specification. | Correct reference is Bid Document Part 2 , Section 3 clause 28.4. Please find revised price schedules Makindu BOM |
| 91 | Part 3 GC 10. Employer's Responsibilities 10.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer. | | There's no date(s) about possession of and accord all right of access specified in the Appendix. Please clarify. | This is not applicable as indicated in Appendix 6. |

| | | | | |
|----|--|--|---|---|
| | The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in that Appendix. | | | |
| 92 | LILO | | <p>1. Do the tower foundations need to perform compressive and tensile tests?</p> <p>2. Do the towers need to perform destructive tests?</p> <p>3. Do conductors and optical cables need to perform factory acceptance test?</p> <p>4. Too many types of tower are used in this project. It is very hard to design all the tower for the short line. Could employer provide the tower drawing used in the near transmission line for this project</p> | <p>1. .Yes, refer to Bid document part 2, Employer's Requirements.</p> <p>2. Only the suspension towers shall be subjected to destructive tests. The tension towers shall be to ultimate loading.</p> <p>3. Yes, refer to Bid document part 2, Employer's Requirements.</p> <p>4. The bidder shall quote as provided for in the bid document.</p> |
| 93 | LILO | | <p>1. Whether all the towers and tower foundations of the transmission line need to be redesigned?</p> <p>2. Is it possible to provide the drawings of towers and foundations of the existing transmission lines for this bidding?</p> | <p>1. Refer to the scope of works in Bid document part 2- Employer's requirements.</p> <p>2. To be provided to the winning bidder where available</p> |

MFN

| | | | | |
|----|-----------------|--|--|---|
| | | | 3. If it is permitted to use the towers of existing transmission line, we understand that type tests could be canceled. Please confirm. | 3. Bidders to quote as per the provisions of the bid document. |
| 94 | LILO Substation | | Kindly provide preliminary geological reports/data for LILO and new construction substation which were done in the concept design stage. | No geological reports are available. It is the bidder's responsibility to conduct due diligence and hence the bidder is advised to visit the sites and conduct any required data collection or tests. KETRACO can facilitate the visits upon request. |

KETRACO: Eng. Eric N. Manyaki

Designation: Project Manager

Signature: 

Date: 3/10/24

COLENCO - Consultant: Aji Puthukodan

Designation: Consultant Resident Engineer

Signature: 

Date: 03/10/2024