

**Procurement Of 132 kV Underground Cable Nanyuki – Rumuruti Transmission Line (AfDB Funded), Tender No.: KETRACO/PT/009/2021**

**Clarification List - 02**

Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
1.	Section III – Evaluation and Qualification Criteria   Clause 2.4.2 Specific Experience	b) For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum experience in the following key activities: Design, supply, installation and commissioning of at least 30 km underground cable Transmission lines of voltages 132kV or above based on the physical size, complexity, methods, technology or other characteristics as described in Section VI, Employer’s Requirements.	Kindly clarify, whether the required specific experience should be for supply of 30kms of 132 kV underground cables by manufacturer or <i>installation</i> of 30kms of 132 kV underground cables.	Refer to Section III – Evaluation and Qualification Criteria   Clause 2.4.2 Specific Experience  It should be design, supply, installation and commissioning.
2.	Section I – Instruction to bidders   Clause 19.8 Bid Security  Section II – Bid Data Sheet   ITB 4.1 (a)	19.8 The Bid Security or the Bid Securing Declaration of a JVCA shall be in the name of the JVCA that submits the bid. If the JVCA has not been legally constituted into a legally enforceable JVCA at the time of bidding, the Bid Security or the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1.  The individuals or firms in a joint venture, consortium or association shall be jointly and severally liable.	Our company plan to form a three parties JVCA to participate this tender, and we are the leader of JVCA. However, the banks that we had cooperated with before replied that they can't issue bank guarantee in the name of JVCA for us. They can only issue official bank guarantee in the name of JVCA leader. Thus, we would like to plead your esteemed office could accept the bank guarantee only in the name of JVCA leader. We also will submit a bid-securing declaration letter in name of JVCA parties to complement the bank guarantee to ensure all the parties will bear required responsibilities and obligation.	Refer to Clause 19.8 and ITB 4.1 and comply
3.	Vol. 2 – 1. General   Clause 1.5 Scope of Work	a) design, supply, delivery to site, installation and commissioning of transmission lines for 132kV three phase High voltage (HV) underground (UG) cable for the following	Please provide 132 kV HV cable cross section details	The bidder to propose in accordance to bid document specifications and meet the capacity provided



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4.	Vol. 2 – 2. XLPE underground cable   Clause 2.5 Conductor and Technical Data Sheet for 132 kV XLPE Cable	Clause 2.5 Conductors shall be stranded, annealed, high conductivity Aluminium Technical data sheet: Conductor Material- Copper	Please confirm which type of material the contractor should consider for this tender	Aluminium conductor
5.			Please provide the maximum induced voltage required under normal and fault conditions.	It's the bidder responsibility to conduct requisite investigations
6.			Please provide details of metallic shield material.  Please clarify the type of cable metallic sheath for 132 kV cable	Corrugated Aluminium
7.			Please provide us with a list of approved civil contractors	This is procurement of plant, design, supply and installation project hence the bidder should provide the information for suppliers, subcontractors as indicated in bid document Vol 1: Page 47, Qualification tables (without pre-qualification), clause 2.7-page 62 to page 66. No list of approved civil contractors
8.			Please provide any list related to approved Testing and Commissioning suppliers	This is procurement of plant, design, supply and installation project hence the bidder should provide the information for suppliers, subcontractors as indicated in bid document Vol 1: Page 47,



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				Qualification tables (without pre-qualification), clause 2.7-page 62 to page 66. No list of approved testing and commissioning contractors
9.			We understand that CIP items should be quoted in both USD and Kenya Shilling, however the price should include other items required to deliver the material such as customs, delivery to site, insurance ,...etc.	Refer to ITB 15.1 in regard to currencies. For CIP refer to the bid document and relevant incoterm interpretation.
10.	Section II – Bid Data Sheet   ITB 19.1	The Bidder shall furnish a bid security, in the amount of not less than Four hundred and fifty four thousand (454,000) US Dollars, or its equivalent in a freely convertible currency issued from a <b>tier 1 bank licensed by the Central Bank of Kenya</b> as per Form of Bid Security included in Section VII – Forms and Procedures	Please confirm that Local Saudi bank (for bonds and banks guarantee) & Local Saudi insurance company are accepted for this tender.  Please confirm that issuing the bid bond from a Saudi bank is acceptable	Any bank guarantee/bond which conforms to clause 19 and ITB 19.1 specifications and provisions in the bid is acceptable.
11.	Section I – Instruction to Bidders   Clause 14.6 Bid Prices and Discounts	If, pursuant to ITB 14.2, prices are adjustable, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data provided in Section IV, Bidding Forms and the Employer may require the Bidder to justify its proposed indices and weightings.	Please confirm that the changes of the cooper LME prices are excluded, and it will be considered as per the LME at the time of contract award?	This is a fixed unit price contract.
12.	Section II – Bid Data Sheet   ITB 15.1	The currency(ies) of the bid and the payment currency(ies) shall be as described below: (a)The unit rates and prices shall be quoted by the Bidder in the Bill of Quantities separately in the following currencies:	Kindly confirm the Currency of the Contract to be quoted for this project?	Refer to ITB 15.1 and adhere. Bidders may adjust the price schedules format to suite the currencies they may opt to use.



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		<p>(i) for those inputs to the Requirements that the Bidder expects to supply from within the Employer’s country, in Kenya shillings, further referred to as “the local currency”; and</p> <p>(ii) for those inputs to the Requirements that the Bidder expects to supply from outside the Employer’s country (referred to as “the foreign currency requirements”), in up to any three currencies of any country.</p> <p>(b) Bidders may be required by the Employer to justify, to the Employer’s satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data, furnished in Section IV. Bidding Forms, are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders</p>	<p>If the Material is supplied from Saudi Arabia or any other country other than Kenya, then the imported material price shall be quoted mandatory in US Dollars or shall be quoted in Shilling? Please clarify.</p> <p>We presume that the tender commercial proposal shall be into a single currency and which is in US Dollar. Please confirm our understanding.</p>	
13.	Section III – Evaluation and Qualification Criteria   Clause 2.5 Personnel	The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements as per table provided.	<p>What is the minimum Staff requirement for these Projects?</p> <p>What is the minimum requirements for the Project Management Organization shall be provided for this project? Please advise.</p>	Refer Section III Evaluation Criteria   Clause 2.5 Personnel for the key personnel. The bidder to establish appropriate organogram and staff input to deliver the project. The cost of the staff shall be deemed to be included in the unit rates in their bid.
14.	Section II – Bid Data Sheet   Clause ITB 21.1  Clause ITB 21.1 (b)	<p>Bidders <b>shall not</b> have the option of submitting their bids electronically.</p> <p>Not applicable</p>	Please confirm our understanding that bidder can upload the bids electronically. If so, kindly provide the electronic submission link and its uploading procedure	Refer to the bid document clause ITB 21.1 and 21.1 (b) and comply. Only hard copy tender submission will be accepted.



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15.	Section II – Bid Data Sheet   Clause ITB 11.1 (j)	<p>The Bidder shall submit with its bid the following additional documents:</p> <p>Qualification requirements for bidders, including members of joint ventures, consortia, subcontractors or vendors:</p> <p>In case of joint venture/consortium, at least one member of the Bidder, must have certification for ISO 9001 or/and 9002: Quality Management/Manufacturing System or equivalent, applicable to:</p> <ul style="list-style-type: none"> <li>• Design, Engineering, Installation, Construction and Commissioning of overhead and underground cable transmission lines of voltages 132kV and above</li> </ul> <p>The Bidder shall submit, with his Bid, certification verifying the Quality Assurance level.</p> <p>The Bidder shall submit a contract methodology describing a full and comprehensive work plan for the implementation of the project.</p> <p>In general, for items of supply, the vendors must have successfully manufactured and supplied in any one year during the last five years, the quantity being proposed for subcontracting, which are in satisfactory operation/use for the past two years as on the date of bid closing. Customer references and testimonials must be provided</p> <p>The Bidder shall submit with its bid, the Manufacturer's Authorization for the following part or component:</p> <ol style="list-style-type: none"> <li>1. Terminal points (Cable sealing end)</li> <li>2. Underground optical fiber</li> <li>3. 132kV HV Underground cable</li> <li>4. Cable riser structure</li> </ol>	<p>Kindly provide us the list of qualified/Approved manufacturers for the following material</p> <ul style="list-style-type: none"> <li>• Cable Sealing ends</li> <li>• Underground Optical Fiber</li> <li>• 132kV HV Cable</li> <li>• Steel structure</li> <li>• Insulator, fitting &amp; accessories.</li> <li>• Surge Arrestor</li> <li>• Cable accessories</li> <li>• CCTV Equipment</li> <li>• Unmanned Aerial Vehicle</li> <li>• Handheld data collection devices</li> </ul>	<p>This is procurement of plant, design, supply and installation project hence the bidder should provide the information for suppliers, subcontractors as indicated in bid document Vol 1: Page 47, Qualification tables (without pre-qualification), clause 2.7-page 62 to page 66.</p> <p>There is no list of prequalified suppliers nor subcontractors</p>



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		5. Insulators, fittings and accessories 6. Surge Arrestors 7. Cable Accessories 8. Underground optical fiber accessories 9. CCTV Equipment 10. Underground Cable Vandalism Detection and Surveillance Equipment 11. Unmanned Aerial Vehicle 12. Handheld data collection devices		
16.	Section II – Bid Data Sheet   Clause ITB 13.2	Alternatives to the Times for Completion <b>shall not be</b> permitted. Time to complete the Plant, Installation Services and pre-commissioning activities shall be <b>12 months</b> .	The Duration of the Project mentioned is 12 months from the Site Access, it's very difficult to complete this job within this Period. Because minimum Delivery period of the Major Equipment's are 6-8 months from the Manufacturer's. in this case kindly revise the Project Schedule.	Comply with ITB 13.2
17.			If tenderer propose a supplier/factory (as alternative) that is not in the approved kindly advise whether tenderer will to be out of the whole tender.	There is no list of approved suppliers, subcontractors
18.	Vol 2 of 2: 1.60.2 Site Training		Kindly confirm that the site training can be conducted during Installation, testing & commissioning. No Separate training/tutor is required. Please confirm.	Refer to Bid document Vol 2 of 2: 1.60.2 Site Training.  Both are applicable.
19.	Vol 2 of 2: 1.62.1 Inspection and tests at supplier's Premises	..... For each inspection, the following are to be provided for each representative:	We understand that applicable class for air travelling is economy. Please confirm	Refer to Bid document Vol 2 of 2: 1.62.1 Inspection and tests at supplier's premises



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		<ul style="list-style-type: none"> <li>Economy class returns air ticket (from Nairobi or the Engineer's home office to Places of Test and/or Inspection).....</li> </ul>		
20.	Section VIII. Particular Conditions   Clause 14.2.1 Total Advance Payment	Twenty Percentage (20%) of the Accepted Contract Amount payable against receipt of an Advance Payment Guarantee issued by the Contractor from a tier 1 bank licensed by the Central Bank of Kenya and will be in the form of a Form of "Advance Payment Security" furnished in Section IX, Contract Forms in the amount(s) and in the currencies and proportions in which the Accepted Contract Amount is payable	Please confirm that there will be advance payment of 20% upon award of contract.	Refer to Clause 14.2.1 and terms and procedures of Payment.
21.	Section VII. General Conditions   Clause 8.7 Delay Damages	<p>If the Contractor fails to comply with <b>GC</b> Clause 8.2 [Time for Completion], the Contractor shall subject to notice under <b>GC</b> Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Particular Conditions, .....</p> <p>These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under <b>GC</b> Clause 15.2 [Termination by Employer] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract</p>	If the delay happened due to change in route from or any technical reason which is not from the contractor, then the delay penalty is not applicable. Please confirm.	Refer to the general conditions clause 8.7 and other relevant clauses in the bid document for clarity.
22.	Vol. 2 of 2 - Technical Requirements   Clause 1.6.2.1 Nanyuki-Rumuruti		Please provide us the make of existing protection & SAS system at Nanyuki, Rumuruti and Isiolo Substation	It's the responsibility of the bidder to visit the three substations and collect information

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23.			Please provide us with the soil investigation report if available of surrounding area and the detail of nature of soil all along the Cable route under this project.	There is no soil investigation report for underground cable route. Bidders may undertake own investigations for bidding purposes.
24.	Vol. 2 of 2 - Technical Requirements   Clause 1.49 Electricity Supplies	The Contractor shall be responsible for providing, obtaining and making all arrangements for the use for the Works of supplies of electricity required, including the provision at his own cost of all apparatus necessary for such use. All precautions which are necessary to ensure the safety of every person on the Site shall be taken. The Contractor's installation shall be to the satisfaction of the Employer's representative who may require the disconnection or alteration of any parts that he considers may be dangerous. Such installation shall comply also with all appropriate statutory regulations and be in accordance with IEC 60364 and IEC/TR 61200-704.	We presume that electricity local distribution service available near to the site office location.	Bidder to make own investigations
25.	Vol. 2 of 2 - Technical Requirements   Clause 1.51.1 Employer's Representative's transport	... The Contractor shall maintain each vehicle in efficient working condition, repair, replace defective parts and tyres and provide fuel and oil and other consumables. The Contractor shall provide all documentation in accordance with Kenya Law, including full comprehensive insurance cover at all times for all vehicles and all drivers for unlimited Third Party claims, at the rates stated in contract forms. A fuel card from a reputable oil company shall be provided for each vehicle loaded with a minimum of Kshs. 30,000.00 per month....	We understand that there are maximum fuel chargers fixed for transportation as Kshs 30,000 per month.	Refer to Vol 2 of 2: Clause 1.51.1 Employer's Representative transport and comply.



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26.	Vol. 2 of 2 - Technical Requirements   Clause 1.51 Employer's Representative's transport	<p><i>Table 3: Vehicle Description</i></p> <table border="1"> <thead> <tr> <th>Item</th> <th>Description</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Type 1</td> <td>Double Cabin pick –up, 3.0 Litre Engine with air conditioning, full service and maintenance</td> <td>5</td> </tr> </tbody> </table> <p>.....The Contractor shall provide the services of one driver mechanic per vehicle .....</p>	Item	Description	Quantity	Type 1	Double Cabin pick –up, 3.0 Litre Engine with air conditioning, full service and maintenance	5	Please confirm that contractor shall provide 5 double cabin pick-up including the one driver mechanic under this contract.	Refer to Vol 2 of 2: Clause 1.51.1 Employer's Representative transport and comply
Item	Description	Quantity								
Type 1	Double Cabin pick –up, 3.0 Litre Engine with air conditioning, full service and maintenance	5								
27.			Please confirm our understanding that once successful completion of project it will be handover to KETRACO and there is not any specified maintenance period in this contract.	Refer to GCC 1.1.3.7 and PC 1.1.3.7 for defect notification period which is 24 months in total.						
28.			We understand that one communication device (mobile phone) shall be provided to client. Please confirm	Handheld data collectors to be provided as per specifications.						
29.	Vol. 2 of 2 - Technical Requirements   Clause 1.60 Training	<p>1.60.1 General</p> <p>... Note: The contractor shall also organise for one week PSCAD training for 10 Engineers at a venue within the Employer's country as agreed with the Project Manager. The cost of the training, training venue and per diems for the participants shall be borne by the contractor. The contractor shall submit the qualification and experience of the training company (the proprietary owner of the software is preferred) with bidding documents. ...</p>	Please confirm that for one-week PSCAD training of 10 Engineers with the Employer's country, there will be no individual allowance to be paid by the contractor.	Refer to Vol 2 of 2: Clause 1.60.1 Training						

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30.	Vol. 2 of 2 - Technical Requirements   Clause 1.60.2 Site Training	<p>Cable jointing, operation and maintenance training at Site shall consist of formal lectures and practical on-the-job training of the Employer's staff during erection, testing and commissioning.</p> <p>The Employer may nominate staff to be seconded to the Contractor to participate in the site training. The Contractor shall train such staff during erection activities and ensure that erection Facilities of important plant components involve the Employer's nominated staff.</p> <p>The site training shall be provided for up to 20 (twenty) staff and shall include detailed explanations based on the cable jointing, operation and Maintenance instruction manuals issued by the Contractor related to dismantling, assembly of equipment and troubleshooting shall be provided. Instructions on maintenance intervals, minimum spare and wear and tear parts shall be provided.</p> <p>The Contractor shall satisfy himself and the Project Manager that the Employer's staff is fully capable of operating and maintaining the Plant. During the final inspection, the Contractor and Project Manager will make a joint assessment of the effectiveness of training and shall develop recommendations for further training, if this be appropriate.</p>	Please provide us the duration of site training required for the Employer's staff	<p>Formal structured Site training duration shall not be less than 1 week for each relevant portion:</p> <ul style="list-style-type: none"> <li>• Installation, Jointing and testing</li> <li>• Operation and maintenance</li> </ul>
31.	Vol. 2 of 2 - Technical Requirements   Clause 1.60.3 Student Internship	... A monthly stipend allowance of Kshs 10,000 shall be provided to each intern. While undergoing internship, the contractor should ensure the interns obtain maximum practical training on the various fields within the scope of works. The contractor should provide a training plan for approval.	We understand that for student internship for 6 members, only a monthly stipend allowance of Kshs 10,000 shall be provided to each student and there will be	Only monthly stipend allowance shall be issued to each intern.

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		KETRACO shall provide details of the interns in the course of the project. ...	no pocket money allowance. Please confirm	
32.	Vol. 2 of 2 - Technical Requirements   Clause 6. Unmanned Aerial Vehicle (UAV) Specifications		Please clarify that unmanned Aerial Vehicle (UAV) -Drone is not required under this project, as its related to Underground cable project and not High voltage transmission lines.	Unmanned Aerial Vehicle (UAV) – Drone shall be supplied as per specifications. Should be added in Sch 4 as item 5.8
33.	Vol. 2 of 2 - Technical Requirements   Clause 7. Detection/Surveillance Systems Technical Specifications		Please provide us approved service provider for detection/surveillance system suppliers.	No approved suppliers or subcontractors
34.			No Remote Monitoring is Required under this project. Please Confirm.	Remote monitoring is required
35.			Please confirm that FAT is not required for 132kV XLPE power cable or any other equipment /material and only 3rd party inspection is required	FAT is required
36.			Please Confirm, not any kind of SAS, SCADA, Protection, Fire Fighting, HVAC & Security System work required at Remote End substation	Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki - Isiolo and Nanyuki - Rumuruti cable



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37. -			We understand that, being a Saudi based company, local designer service is not required. Please confirm.	This is procurement of plant, design, supply and installation project hence responsibility of the bidder/contractor to provide design services.
38.			Regarding power cable termination, we understand that only HV termination is required to be inspected by third party inspector.	The client and consultant representatives shall attend the power cable terminations including HV terminations FATs
39.			Please confirm whether there is requirement of pilot wire protection. If so, kindly provide details.	No dedicated Pilot wire protection is to be provided for cable. Optical fiber cable to be provided for both lines along the cable route.
40.			Please confirm any supply of new protection panel at the specified substations.	It's the Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki - Isiolo and Nanyuki - Rumuruti cable. Bidder to carry out investigation on the suitability of existing protection system and provide the appropriate upgrade in their bid including supply of panels if necessary. This is deemed to be included the testing fee item on price schedule.
41.			Please confirm any supply/modification of Telecom equipment (such as SDH, DVM, etc.) inside any specified substations.	Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki - Isiolo and Nanyuki - Rumuruti cable. Bidder to carry



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				out investigation on the suitability of existing telecommunication system.
42.			Please confirm any supply/modification of tele protection equipment.	Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki - Isiolo and Nanyuki - Rumuruti cable. Bidder to carry out investigation on the suitability of existing telecommunication system.
43.			Please confirm any supply of media converters.	Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki - Isiolo and Nanyuki - Rumuruti cable. Bidder to carry out investigation on the suitability of existing telecommunication system.
44.			Please confirm any supply/modification of SCADA system.	Bidders responsibility to provide comprehensive bid for complete functionality, protection, monitoring, surveillance of the Nanyuki Isiolo and Nanyuki Rumuruti cable. Bidder to carry out investigation on the suitability of existing SCADA system.
45.			Please provide the existing details of Protection system at all substations (Nanyuki, Rumuruti and Isiolo).	Bidders to visit site to undertake investigation and verify. As built drawings shall be provided to the winning bidder.



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46.			Please provide existing SLDs for (Nanyuki, Rumuruti and Isiolo).	SLDs will be provided to the winning bidder.
47.			Please provide us the detail of nature of soil all along the Cable route under this project.	There is no soil investigation report for underground cable route. Bidders may undertake own investigations for bidding purposes.
48.			Please clarify our understanding that Nanyuki, Rumuruti and Isiolo substations are existing substation.	These are existing substations. Rumuruti is not energized.
49.			We understand that the cable entrance to the substation through a tunnel or direct buried? Please clarify.	The cable is not being terminated at the substation. Cable section is between overhead line sections.
50.			Please clarify from which side of the substations should we enter with the 132kV power cable?	The cable is not being terminated at the substation. Cable section is between overhead line sections.
51.	Vol 2 of 2 - Employer's Requirement  Clause 1.8 Details of Transmission Line Routes	<p>Details of the general routing of the underground lines shall be provided as route maps and given in soft copy together with the bid documents as Appendix 2. An overview of the proposed route is provided in Appendix 1.</p> <p>The contractor is required to familiarise himself with the all services that will interact with the underground and overhead lines in order to provide a functional bid.</p>	<p>Is the cable corridor in the open field? Urban area? Crowded? Heavy or low traffic? Any existing underground utilities? Please clarify.</p> <p>Please provide us the authorities/departments with whom the contractors need to coordinate for the excavation permits? And its fees if any.</p>	Route conditions varies. Refer to the route map provided. Bidders can gather more information on the ground.



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52.	Vol. 2 of 2 - Technical Requirements   Clause 2.14. Electrical System Design Parameters	The standard sizes and characteristics of the cables shall be as follows: The following electrical design parameters shall be used in the design of the 132kV cable circuit. Nominal System voltage: 132kV Max. / Min voltage variation +10% / -10% Loading capability of each 132kV cable circuit 115 MVA Short circuit level 31.5kA for 1sec	132kV Cable Size is not mentioned in price schedule, specification or data sheet. However as per clause no. 2.14 of Part 2 - Employer's Requirement, Loading capability of each 132kV Cable circuit should be 115MVA. Kindly confirm cable sizing is to be finalized as per this parameter.	The cable should be sized such that each completed circuit loading capacity is 115 MVA
53.			As per price schedule No. 1, supply of 132kV three phase double circuit power cable & 132kV three phase single circuit power cable is required. But as per Schedule No. 4, - CABLE INSTALLATION, Triple circuit buried cable are also required. However, Triple circuit buried cable is not mentioned in supply schedule.	The Nanyuki – Rumuruti double circuit and Nanyuki – Isiolo single circuit are running parallel for a portion hence triple circuit.
54.			As per price schedule No. 1, supply of 132kV three phase double circuit power cable Nanyuki - Rumuruti - 16.8kM & 132kV three phase single circuit power cable Nanyuki - Isiolo - 4.2kM is required. But as per Schedule No. 4, No. 1 - SURVEY WORKS, only survey of 16.8kM route is required i.e. for Nanyuki-Rumuruti circuit. Kindly confirm whether survey of Nanyuki-Isiolo - 4.2kM is required or not.	The Nanyuki – Rumuruti double circuit and Nanyuki – Isiolo single circuit are running parallel for portion hence triple circuit.  Survey of the complete underground cable is required. The triple circuit, double circuit and single circuit sections



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55.	Vol 2 of 2 - Technical Requirements   Clause 1.47. Office accommodation for use of the Employer's representative  Vol 2 of 2 - Employer's Requirement  Clause 1.51.2. Project Management & Office Tools	.....The site office provided by the Contractor shall be fully furnished using a good standard of office furniture to be approved by the Employer's representative and fully equipped with: ..... • Two desktop computers suitable for use with PLS - CADD, PLS Tower and AutoCAD  Three (3) Laptops shall be provided by the Contractor for use by the Employer.	As per price schedule No. 5.5, supply desktop computer is required. However as per clause no. 1.51.2 Employer's Requirement Laptop specification is require, kindly confirm whether Laptop is required of desktop.	Laptops which should be as per clause 1.51.2 for Sch 4, No 5.3  The desktop computers shall be covered under Sch 1, No 5.5
56.			Format of MAF, (manufacturers authorization form) is not provided in tender documents	Format is provided as attachment of this clarification
57.			As per Volume 2 of 2, 1.5, Scope of works kindly clarify the following: a) Nanyuki - Rumuruti Transmission Line (Double circuit)- 2 terminal towers at both ends. b) Nanyuki - Isiolo Transmission Line (Single Circuit)- 2 terminal towers at both ends. However, in BOQ, Supply and installation is for only 1 (one) terminal tower- Kindly clarify.	Nanyuki – Rumuruti will utilize the existing terminal towers at both ends while Nanyuki – Isiolo line will require a terminal tower at one end.





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			in the Price Schedule 4 BOQ. Kindly clarify.	
60.			Please kindly provide the local taxes and rates for Schedule No. 1, No.2, No.3 and No. 4 respectively.	The Kenya Revenue Act –Cap 469 and other registrations and regulations clearly outlines all issues relating to duties and taxes in Kenya
61.			We understand that price schedule quantities are based on preliminary design. While in execution stage, payment will be made on the actual quantities from detailed design at the quoted unit price. Please kindly confirm.	Yes.
62.	Technical data sheet for 132 kV XLPE Cable		In the technical datasheet, nominal thickness of insulation is 20mm, please confirm whether we can optimize insulation thickness according to our manufacturing capability and design?	The bidder to follow the specifications provided in the bid document.
63.			In the technical datasheet for 132KV XLPE, nominal thickness of metallic screen is copper wire, while 2.10. metallic sheath of page 72 from Volume 2 Nanyuki Underground Cable , it states that for the purpose of increasing the total short circuit current rating of the cable, an Aluminium wire screen of suitable cross sectional area shall be applied between the core	The metallic shield shall be corrugated Aluminium



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			bedding layer and the lead sheath. An Aluminium tape shall be applied directly over the Aluminium wires in an opposite lay to the lay of the Aluminium wires, to ensure equal current sharing in the Aluminium wire screen. Please confirm if the metallic screen should be copper wire or Aluminium wire + Aluminium tape?	
64.			In the technical datasheet for 132KV XLPE, it is saying Type and material of protective anticorrosion external sheath covering shall be HDPE, while 2.11. oversheath of page 72 from Volume 2 Nanyuki Underground Cable , it states that the outer covering shall preferably be of medium density polyethylene, except for the closing sections that enter building s, which shall be of a low smoke, zero halogen material (LSOH)., please confirm the type and material of outer sheath .	HDPE shall be utilized.
65.			As for short time current density(1sec) in Metallic screen, please confirm whether the unit is kA/mm <sup>2</sup> but not 2kA/mm <sup>2</sup>	The unit is kA/mm <sup>2</sup>
66.			Please kindly provide Technical Data Sheets in editable EXCEL or WORD format.	Provided in the attachment of this clarification. It's the responsibility of the bidder to confirm that the word and bid document PDF format are same.



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67.			Is there a scheduled date for a mandatory site visit? If so when?	The site visit was conducted on 2 <sup>nd</sup> March 2021 which was specified in the bid document. The site visit was not mandatory.
68.	Section II. Bid Data Sheet   Clause D Submission and Opening of Bids – ITB 22.1.  Addendum 1	For bid submission purposes only, the Employer’s address is : Attention: The Company Secretary The Kenya Electricity Transmission Company Ltd 5th Floor, KAWI COMPLEX, BLOCK B, SOUTH C Popo Lane Off Red Cross Road, South C, PO Box 34942 – 00100 Nairobi, Kenya The deadline for bid submission is: Date: 5th April 2021..... Time: 10.00 a.m.  The deadline for bid submission is extended to Date: Wednesday, <b>19<sup>th</sup> April 2021</b> Time: 10.00 a.m.	We are studying the offer and together with our collaborators, due to the complexity of the design and the data that we have at the moment, in order to offer a professional offer, as KETRACO deserves, we ask you to offer us 1 more month to present the offer.  We would like to kindly request you to extend the deadline for Tender submission of KETRACO/PT/009/2021 for two weeks, i.e., from 5th April 2021 to 19th April 2021.	Refer to Addendum 1
69.	Employer’s Requirement  Clause 1.5 – Scope of Work	The scope comprises of a) design, supply, delivery to site, installation and commissioning of transmission lines for 132kV three phase High voltage (HV) underground (UG) cable for the following: i. Approximately 16.8 km section of Nanyuki – Rumuruti Transmission Line (Double circuit).  The terminal points shall be the designated steel lattice towers along the respective transmission lines and the Rumuruti transmission line gantries at Nanyuki substation.	Is missing information about this subject. Please send us the technical details about the aerial lines: Transition Towers (calcul conditions, Load Tree, etc.)  Is missing information about this subject. Please send us the technical details about	The drawings provided to give bidders ability to submit the bids. More details will be given to the winning bidder.



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		ii. Approximately 4.2 km section of Nanyuki – Isiolo Transmission Line (Single circuit). The terminal points shall be the designated steel lattice towers along the respective transmission lines above.	the Aerial airline: Aerial Conductor+ OPGW, etc.	
70.	Vol 2 of 2 - Employer's Requirement  Clause 1.6.1 – Definition of Work	... The overall underground cable system shall include: <ul style="list-style-type: none"> <li>• 1.5 km of double circuit underground cable system with single pilot fibre in concrete trench installation</li> <li>• 11.5 km of double circuit underground cable system with single pilot fibre in directly buried installation</li> <li>• 3.8 km of triple circuit underground cable system with two pilot fibre in directly buried installation</li> <li>• 0.4 km of single circuit system with single pilot fibre system in directly buried installation</li> <li>• Three class 'B' road crossings via micro tunnelling</li> <li>• Three access entrance (gate) crossings via micro tunnelling</li> </ul>	Please define "class B".	Class B is a national road linking one important center to the other. Refer to ministry of works (roads department) road design manual Part 1-Geometric Design of Rural Roads-Roads Classification.
71.	Employer's Requirement  Clause 1.6.2 – Nanyuki-Rumuruti Secondary Electrical Works	1.6.2.1. NANYUKI –RUMURUTI There exists line protection in Nanyuki and in Rumuruti substations Scope of works in Nanyuki SS The secondary scope of works in Nanyuki include: 1. Modification of the protection settings to include the cable section of the transmission lines. This should take into consideration the charging currents of the cable. This should involve a study to confirm suitability of auto reclosing functionality.	We cannot find any information about the existing lines and about Protection and Control existing System. Please send us the information about this subject for both Nanyuki and Rumuruti substations.	Bidders to visit site to undertake investigation and verify. The detailed drawings will be provided to the winning bidder.

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		2. Retesting of the transmission lines existing protection schemes. In this case, there exists 2 bays for Rumuruti line. The contractor is required to reconfiguration and parameterize the protection and control scheme with the new settings and any changes necessitated by the cable section for the 2 bays even if one is future. 3. Retesting of all of the transmission lines existing protection schemes. 4. Remote end to end testing. 5. Reconfiguration of SAS signals if required		
72.	Vol 2 of 2 - Employer's Requirement  Clause 1.8 Details of Transmission Line Routes	Details of the general routing of the underground lines shall be provided as route maps and given in soft copy together with the bid documents as Appendix 2. An overview of the proposed route is provided in Appendix 1. ....	Is missing these 2 documents. Please send us this documentation.	Refer to bid document 'Proposed route Nanyuki Underground cable' and 'Proposed Route Coordinates Nanyuki Underground cable'
73.	Vol 2 of 2 - Employer's Requirement  Clause 5.3 Civil Works Criteria, 5.3.1 General	.....In general, the following principles shall be followed • The power and pilot cable of each circuit shall be laid in separate trenches, troughs or ducts. Two circuits in one trench shall be avoided as far as possible unless the circuit functions are inter-dependent in which case, subject to the approval of KETRACO, two segregated circuits may be installed in one (concrete) cable trench. The minimum separation between independent circuits shall be 1.5m....	Please define "inter-dependent" circuits	Nanyuki – Rumuruti circuits are inter-dependent. Incase of concrete cable trench, the minimum separation between the circuit shall be 750mm....

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74.	Vol 2 of 2 - Employer's Requirement  Clause 5.3.2 Cable Laying Conditions 5.3.3 Installation Conditions		Please define the areas with open cable, cable in concrete tubes and cable with directed perforation.	Refer to the cable route drawing as well as employer's requirement.  The cable trench which lies along KENHA road reserve is approximately 1.5km long. The trench should be within 2m of edge of the road reserve.
75.	Vol 2 of 2 - Employer's Requirement  Clause 5.3.3 Installation Conditions	5.3.3.2. For cables installed in surface troughs Maximum thermal resistivity of ground 2.0Km/W  In the calculation of current rating, the soil has been assumed to have constant thermal resistivity of 2.0Km/W regardless of the heat input from the cables. The Contractor shall maintain this figure even in case of the moisture migration and completely dry soil. The contractor shall demonstrate by calculation that the thermal performance of the installation meets the requirements of the circuit, taking into account all credible operating conditions	"For cables installed in surface troughs" Please define this zone for calculate	There is no surface trough, however, the bidder should propose and calculate for relevant cable support (if required) in the cable trench.
76.	Cable Trench Drawing Examples		Is missing drawing information. The information that we have received it's only informative and without explanatory. The plans do not correspond to the Technical Specifications of Volume 2.  Please define the total width of the trench easement strip, in the case of the 1-circuit,	The bidder should propose the best cable formation to fit the different route conditions.  The right of way for different circuits are as follows: <ul style="list-style-type: none"> <li>• Triple circuit -14m</li> <li>• Double circuit -11m</li> <li>• Single Circuit – 8m</li> </ul> The right of way includes the work area.

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			2-circuit and 3-circuit part. We understand that the width will include the work area.  Please define the sections of the trench in the 3 cases: 1 circuit, 2 circuits and 3 circuits.  Please define the concepts of the: Direct Burried cable In surface Trough Installed in air	In the event that the contractor would require more working area outside the above right of way, he will be required to make his own arrangement.
77.	Proposed Route Nanyuki Underground Cable		According with this plan, the scope of work is finished in the Transposition Towers. But in the scope of work from the Volume 2, we need to entry in the Substation with the conductor, OPGW, etc. Please clarify this aspect.	Please clarify about transposition towers? The scope also includes the ADSS cable and all accessories from gantry to the control room. It also includes the complete functionality of the optic fiber.
78.	Vol 2 of 2 - Employer's Requirement  Clause 1.6.1 Definition of Work	... The overall underground cable system shall include: • 1.5 km of double circuit underground cable system with single pilot fibre in concrete trench installation • 11.5 km of double circuit underground cable system with single pilot fibre in directly buried installation • 3.8 km of triple circuit underground cable system with two pilot fibre in directly buried installation • 0.4 km of single circuit system with single pilot fibre system in directly buried installation • Three class 'B' road crossings via micro tunnelling • Three access entrance (gate) crossings via micro tunnelling	"Three class 'B' road crossings via micro tunnelling" Please clarify whether tunnel shall involve the only one cable circuit or can take three cable circuits at once. if it is latter case, does it mean that 3 no of cable tunnel will be constructed along the cable route? Employer is requested to provide expected boring locations on the cable route drawing	Microtunnelling shall be applied for crossings only. Approximately three road crossings are envisioned. Each circuit shall be installed in one tunnel. Crossings are as per the route map drawing provided. Boring locations are the responsibility of the bidder



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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
		...		
79.	Vol 2 of 2 - Employer's Requirement   Clause 1.6.1 Definition of Work	<p>... The underground cable transmission line works include the following but not limited to;</p> <p>... Testing of underground optic fibre and provision of the OTDR test results for the overall complete lines i.e Rumuruti Nanyuki (end to end)</p> <ul style="list-style-type: none"> <li>- Calculation of the underground cable parameters for System Protection.</li> <li>- Design, supply of material and construction of foundations.</li> <li>- Design, supply of material and construction of cable trench.</li> </ul> <p>...</p>	<p>"Calculation of the underground cable parameters for System Protection."</p> <p>This calculation work is considered to be the scope of the System protection supplier</p>	The calculation will be within the scope of works in this project.
80.	Vol 2 of 2 - Employer's Requirement   Clause 1.6.2.1 Nanyuki - Rumuruti	<ol style="list-style-type: none"> <li>1. Modification of the protection settings to include the cable section of the transmission lines. ~</li> <li>2. Retesting of the transmission lines existing protection schemes ~</li> <li>3. Retesting of all of the transmission lines existing protection schemes.</li> <li>4. Remote end to end testing.</li> <li>5. Reconfiguration of SAS signals if required.</li> </ol>	U/G cable's electrical parameters can be only provided such as sequence impedance, charring current. The protection setting modification and existing protection schemes retesting, others shall be done by system protection supplier	The scope will be undertaken by the winning bidder at detailed design phase.
81.	Volume 2 Employer's Requirement   Clause 1.10.2 Temperature  2.2 Particulars of Environment	<p>1.10.2 Maximum temperature 45°C</p> <p>2.2 Ambient Air Temperature, Indoor, Maximum +40°C Ambient Air Temperature, Outdoor, Maximum +36°C</p>	Please confirm which Max ambient temperature can be applicable to a of cable sizing, calculation. Furthermore, Max. ground temperature is to be provided to Bidder as well.	<p>Refer to Clause 1.10.2 and 2.2</p> <p>The Max. ground temperature + 40°C Ambient Air Temperature, Outdoor, Maximum +36°C</p>



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	5.3.3.3. For cables installed in air	5.3.3.3 Maximum temperature of ambient air: 35°C.		
82.	Vol 2 of 2 – Employer's Requirement   Clause 1.42. Additional services of Contractor's staff	The Employer's representative shall so require, the Contractor shall provide the services of skilled workmen for the repair of any defect ~	The cost of services of skilled workmen for the repair of a defect shall be available to be charged, if the defect is found to be not the contractor's fault.	This shall be interpreted in accordance to the provision in GCC regarding completion, commissioning and defects liability.
83.	Vol 2 of 2 – Employer's Requirement   Clause 1.51.2.2. Handheld Data Collectors	<b>Software</b> The contractor shall provide software, server based licences (where available) and subscriptions for the client. The contractor shall provide licences for a period of six years. This software shall be as indicated in the Scope of supply document. The following, in addition to other software used by the contractor in the project design, shall be provided - AutoCAD	Is AutoCAD only one software that is required for Handheld data collectors? Please confirm that commercial type product such as Samsung Tab can be applicable to supply of	The handheld data collector should meet the specifications provided in the bid document. AutoCAD is to be provided for pc use. Specialised product is required for the hand held data collector
84.	Vol 2 of 2 – Employer's Requirement   Clause 1.60. Training 1.60.1 General	The contractor shall also organise for one week PSCAD training for 10 Engineers at a venue within the Employer's country as agreed with the Project Manager	PSCAD software is not the subject to scope of supply. Therefore, PSCAD training shall be excluded from contractor's obligation	Adhere to requirement as per Clause 1.60.1
85.	Vol 2 of 2 - Employer's Requirement  Clause 2.14 Electrical System Design Parameters	The standard sizes and characteristics of the cables shall be as follows	132kV Cable conductor size is not specified on the tender document. Please clarify whether Bidder shall determine it, or Employer provides it	The cable should be sized such that each completed circuit loading capacity is 115 MVA



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86.	Vol 2 of 2 - Employer's Requirement  Clause 2.16. Ground Thermal Resistivity  Clause 5.2 Site Coordination & Integration	All cable circuits are to be installed using a selected sand backfill that has a guaranteed dried-out TR of no greater than 2.7Km/W. The contractor will advise the guaranteed dried-out TR of the selected sand backfill that they choose.  Specific thermal resistance of 2.0Km/W shall be maintained even for completely dry backfilling material	Please provide thermal resistivity value of native soil for a calculation of cable conduction size. In addition, there are two requirements for thermal resistance value for the backfill material in the tender document as below 2.7K.m/W and 2.0K.m/W, respectively. Which value shall be applied to the backfill materials encased around cable.	Clause 2.16 is applicable. That is TR not greater than 2.7Km/W
87.	Vol 2 of 2 - Employer's Requirement  Clause 5.3 Civil Works Criteria 5.3.1 General	... In general, the following principles shall be followed  • The power and pilot cable of each circuit shall be laid in separate trenches, troughs or ducts.....	Pilot cable is not seen on the list of items to be supplied by Contractor in the price schedule and tender document. Please confirm that this cable means Fiber optic cable and if so, it shall be installed in the same trench with 110kV cable	The pilot cable refers to fiber optic cable. The installation shall be in accordance to Clause 5.3.  The project is 132kV and not 110kV
88.	Vol 2 of 2 - Employer's Requirement  Clause 5.3.2.2. For cables installed in surface troughs  Clause 5.3.5 Supporting Steelwork and Cleats	<b>For cables installed in surface troughs</b> The cables shall be laid with the phase spacing 250mm. in a flat formation  Cable supports, cleats and clamps shall be made of material compatible with the cable outer sheath and shall be of the stand-off type shaped to suit the size of cable and not to cause undue distortion of the outer cable sheath. Cleats used for single core AC cables shall be of non-magnetic materials and be arranged in such a manner as to avoid setting up of magnetic circuits through steelworks, which may affect the intended capacity of	On the file of 'Cable Trench drawing example', It is seen that cable are laid with trefoil arrangement. Please let us know which cable arrangement (flat or trefoil) is applicable to inside of a concrete trough	Bidder to select arrangement for the concrete trough that optimizes the 2 m corridor and meets the power transfer capacity of the circuits under the site conditions

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		the cable. Trefoil cleats shall be used as required by the cable system design.		
89.	Vol 2 of 2 - Employer's Requirement  Clause 5.3.2.2. For cables installed in surface troughs	In the cable troughs, the material surrounding the cable must not damage the cable surface and must be suitable for restraining the cable against any thermal expansion or traffic induced movements	Trench types 1~3 in the 'Cable Trench Drawing Example' file seem to have no backfill material around cables in the cable trough. Employers should clarify whether special backfill materials should be considered or empty spaces is applied to the inside of that	The drawings provided are not the final design drawing. The drawings are just a guideline of how the cable trench looks like. Final design will be prepared by contractor and subjected to review during detailed design phase of the project.  The trenches will be backfilled to meet technical specifications.
90.	Vol 2 of 2 - Employer's Requirement  Clause 5.3.7. Method of Cable Laying	The Contractor shall allow for installation of permanent thermocouples for sheath temperature test in his contract price. At least one set of permanent thermocouples shall be installed at every 3000m.	Thermocouples can only be attached to the surface of the cable jacket. Employer should confirm that only thermocouples lead for the test is required and any other instruments related to the measurement will be prepared by himself	Bidder/contractor shall provide all the necessary equipment and material for all measurements and testing.
91.	Vol 2 of 2 - Employer's Requirement  Clause 4.2.2 Optical Fiber Characteristics	Optical fiber characteristics	Are deviations allowed? There are many types of G655 such as A, B, C, D, E. and LS Cable & System uses G655 for production. Procurement of fiber can be difficult if the fiber must meet 100% of the requirements in clause No. 4.2.2.	Deviations are not allowed.
92.	Vol 2 of 2 - Employer's Requirement  Clause 2.23.3. Straight joints	..... The design of joint will accommodate insulation retraction and expansion.	Normally, the Cu-foil sensor will be applied as internal PD sensor. It will be wrapped around the power cables beside joint or termination. It will be connected to coaxial	The bid should comply with the bid specifications.

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		<p>The design of joint will include an internal partial discharge (PD) sensor.</p> <p>The joint shall be provided with an Aluminium joint shell suitable for a metallic seal to the extruded metallic sheath of the cable.</p>	<p>cable and wrap the PVC tape, heat shrinkable tube. It will be permanently used. Please confirm it.</p>	
93.	Vol 2 of 2 - Employer's Requirement  Clause 7.5.1. Detection Capability, 7.5.1.1 Underground Power Cable	<ul style="list-style-type: none"> <li>• .....The system when calibrated according to manufacturer's guidelines shall not suffer nuisance alarms from any of the following sources: .... Temperature changes</li> <li>• Sunrise/sunset</li> <li>• Acoustic or magnetic effects</li> <li>• Fog</li> <li>• The system shall utilize advanced processing and an environmental compensation algorithm to minimize the probability of nuisance alarms from the following sources:                             <ul style="list-style-type: none"> <li>• Wind</li> <li>• Rain and hail</li> <li>• Sandstorms</li> <li>• Motion of nearby objects or vegetation</li> <li>• Motion of surface or ground water</li> <li>• Seismic vibration caused by nearby vehicular traffic</li> </ul> </li> <li>• The system shall provide a means to detect and reject alarms from vehicle traffic moving parallel to the sensor cable.</li> </ul>	<p>There are various items for detection capability. But, almost items such as sunrise/sunset, Fog, Wind etc. cannot applicable for power cable monitoring. In general, the temperature and vibration monitoring system are most commonly used. So, please clarify which items are required.</p>	<p>The bid should comply with the bid specifications.</p>
94.	Vol 2 of 2 - Employer's Requirement  Clause 2.10 Metallic Sheath.	<p>The sheath is required to fulfil the following requirements;</p> <ul style="list-style-type: none"> <li>• To provide a radial watertight barrier to the ingress of moisture into the extruded cable core.</li> <li>• Provide low resistance path for cable charging current</li> </ul>	<p>Please confirm that it can be amended to the following description because Cu-Te lead alloy is more excellent steep and fatigue resistance for the vibration than</p>	<p>The sheath shall be aluminium.</p>

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		<ul style="list-style-type: none"> <li>• Provide protection against minor accidental damage caused by third party interference with the cable during installation or service</li> <li>• Be capable of sustaining the specified earth fault currents for the time stipulated by the user.</li> </ul> <p>The water impervious sheath shall consist of a seamless and continuously extruded tube of lead alloy. The lead alloy used for the sheath shall be alloy 1/2C. A thin layer of bitumen shall be applied over the sheath.</p>	alloy 1/2C. -> 'The lead alloy used for sheath shall be alloy 1/2C or Cu-Te alloy.'	
95.	Vol 2 of 2 - Employer's Requirement  Clause 2.23.3. Straight joints	The joint shall be provided with an Aluminium joint shell suitable for a metallic seal to the extruded metallic sheath of the cable.	Please confirm that it can be revised to the following description because Copper has better anti-corrosion properties than aluminum. -> 'The joint shall be provided with a copper joint shell suitable for a metallic seal to the extruded metallic sheath of the cable.'	As per specifications clause 2.23.3
96.	Vol 2 of 2 - Employer's Requirement  Clause 2.23.3. Straight joints	Cable joints buried in the ground shall be enclosed in a fibre glass casing and the space between the joint and casing shall be completely filled with bituminous compound of approved grade	Please confirm that it can be changed to the following description because Since bituminous is a chemical harmful to the human body, polyurethane is proposed. -> 'Cable joints buried in the ground shall be enclosed in a fibre glass casing and the space between the joint and casing shall be completely filled with polyurethane compound of approved grade'	Comply with the bid document specifications.



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97.	Vol 1 Section III – Evaluation and Qualification Criteria   Clause 2.4.2 Specific Experience	three contracts within the last ten years, each with a value of at least US\$12 million...	Such experience shall be based on the similar scope of work: 132kV transmission turn-key project outside bidder's home country, correct?	The project should be 132kV underground cable project similar in scope of works. The projects are not restricted to bidder's home country.
98.	Vol.1 Section VIII - Particular Conditions  Clause 14.2.5(b) Repayment amortisation rate	Thirty percent (30%)	Kindly explain to us about this clause. It means that advance payment is not going to pay contract 100% amount at once?	Advance payment shall be paid in accordance to clause 14.2.1 of Section VIII. The advance payment shall be recovered in subsequent invoices. Each recovery shall be 30 % of the current invoice until all the advance payment if fully recovered.
99.	Vol.1   Appendix 1	Terms of payment - Five percent(5%) upon issue of the completion certificate - Five percent(5%) upon issue of the operational acceptance certificate	Kindly advise us when the completion certificate will be issued (Upon completion of the contract: 12 months?) Also advise us when the operational acceptance certificate will be issued.	Completion certificate is 'Taking-over Certificate' as per Clause 1.1.3.5 while Operational Certificate is 'Performance Certificate' as per Clause 1.1.3.8 of Section VII General Conditions. Refer to GCC clause 10 for more details.
100.	General		Thanks for having us for the kick-off meeting. As for those who had attended physically the meeting and those who where on remote assistance, I would like to have the complete list of all the companies that are bidding for this tender.	The minutes of meeting for the pre-bid meeting together with the site visit are shared in the website. The list of attendances is as well shared. This an international competitive bid/ tender. The list of bidders will be established during tender opening.
101.	Vol 1 Section III - Evaluation and	(a)Participation as contractor, management contractor, or subcontractor, in at least three (3) contracts within the last ten	Is underground cable Transmission lines with voltage level of 66 kV also can be	Only 132kV or above voltage level of underground cable projects are accepted.

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	Qualification Criteria  Clause 2.4.2 Specific Experience	(10) years, each with a value of at least US\$ 12 million, that have been successfully and substantially completed and that are similar to the proposed Works. The similarity shall be based on the physical size, complexity, methods/technology or other characteristics as described in Section IV, Bidding Forms.	considered for this point or only "132kV and above"? Please clarify.	
102.	Vol 2 of 2 - Employer's Requirement  Clause 2.4. General Requirement  Clause 2.14. Electrical System Design Parameters	2.4. General Requirement The cable shall comply with the requirements of IEC 60840, IEC 60228 plus any additional requirements specified hereafter. The cable shall be designed for reliable service life of at least 40 years. All materials used shall be compatible and suitable for the continuous operating temperature of the cable of 90°C and short circuit temperature of 250°C (5 seconds duration).  2.14. Electrical System Design Parameters The standard sizes and characteristics of the cables shall be as follows: The following electrical design parameters shall be used in the design of the 132kV cable circuit. Nominal System voltage: 132kV Max. / Min voltage variation +10% / -10% Loading capability of each 132kV cable circuit 115 MVA Short circuit level 31.5kA for 1sec	As per Clause no 2.4 & 2.14, Cross section requirement for 132kV EHV Cable shall be proposed by the bidder. We request to specify the Cross section of the 132kV Cabling to ensure uniformity in bidding.	The bidder to propose in accordance to bid document specifications and meet the 115MVA capacity provided.
103.			Specification is not clear on the Type of installation of 132kV Cable. i.e. Trefoil	Bidder to select arrangement for the relevant right of way corridor and meets



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			formation or Flat formation. Kindly confirm the same	the power transfer capacity of the circuits under the site conditions
104.			We hope bidder can propose any make meeting the technical requirements. There is no list of approved make or preferred list from KETRACO. Kindly confirm.	The bidder can propose any make for equipment or materials as longer as they meet the technical requirement. There is no list of approved equipment/material make from KETRACO.
105.	Vol 2 of 2 - Employer's Requirement  Clause 2.14. Electrical System Design Parameters  Clause 2.15 Thermal Rating design parameters	Electrical System Design Parameters The standard sizes and characteristics of the cables shall be as follows: The following electrical design parameters shall be used in the design of the 132kV cable circuit. Nominal System voltage: 132kV Max. / Min voltage variation +10% / -10% Loading capability of each 132kV cable circuit 115 MVA Short circuit level 31.5kA for 1sec  2.15 The environmental parameters shall be as advised in clause 22  The following installation parameters should be used unless otherwise stated in the project specification • Depth to the top of cable 1100mm (minimum) • Phase spacing: 250mm • Circuit Spacing: thermal independence	In case if the Cross-section requirement for 132kV Cable is to be decided by the bidder, kindly confirm the following parameters: i) Load Capability: 115MVA ii) Short Circuit Rating: 31.5kA/1s iii) Trefoil/Flat formation (accordance to SI no 2 above). iv) Depth of Burial: 1100mm (top of cable). v) Cross bonding system. Kindly confirm.	Refer to clause 2.14 for load capacity and short circuit rating  For cable formation, the bidder to select arrangement for the relevant right of way corridor and meets the power transfer capacity of the circuits under the site conditions.  The phase spacing will be dependent on the cable formation selected by the bidder/contractor.  For depth of burial refer to clause 2.15.  For the cross-bonding system, the bidder/contractor shall design according to the relevant applicable standards.

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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
106.	Vol 2 of 2 - Employer's Requirement  Clause 2.10 Metallic Sheath	The sheath is required to fulfil the following requirements; <ul style="list-style-type: none"> <li>• To provide a radial watertight barrier to the ingress of moisture into the extruded cable core.</li> <li>• Provide low resistance path for cable charging current</li> <li>• Provide protection against minor accidental damage caused by third party interference with the cable during installation or service</li> <li>• Be capable of sustaining the specified earth fault currents for the time stipulated by the user....</li> </ul>	As per Clause no 2.10, the metallic sheath shall be capable of sustaining the specified earth fault currents for the time stipulated by the user. Kindly specify the fault current and duration of fault current of metallic sheath.	Short circuit withstand for sheath is 31.5kA/1s.
107.	Vol 2 of 2 - Employer's Requirement  Clause 2.16 Ground Thermal Resistivity	The area around Nanyuki is generally made up of predominantly red soil with few pockets of black cotton. It is however, the responsibility of the contractor to determine the actual ground conditions of the project area and design accordingly. All cable circuits are to be installed using a selected sand backfill that has a guaranteed dried-out TR of no greater than 2.7Km/W. The contractor will advise the guaranteed dried-out TR of the selected sand backfill that they choose.	Kindly confirm, ground thermal resistivity report will be provided. Ground thermal resistivity: 2.0Km/W as indicated in the technical specification seems very high and will increase the size of the cable. Please clarify the bidder allowed to consider the actual soil thermal resistivity of site.	There is no report for thermal resistivity report by KETRACO. However, the bid/contractor shall utilize thermal (TR) resistivity not greater than 2.7Km/W.  The bidder may carry out test to determine the TR at site at their own cost.
108.	Vol 2 of 2 - Employer's Requirement  Clause 2.16 Ground Thermal Resistivity	The area around Nanyuki is generally made up of predominantly red soil with few pockets of black cotton. It is however, the responsibility of the contractor to determine the actual ground conditions of the project area and design accordingly. All cable circuits are to be installed using a selected sand backfill that has a guaranteed dried-out TR of no greater than 2.7Km/W. The contractor will advise the guaranteed dried-out TR of the selected sand backfill that they choose.	As per Clause no 2.16, backfill must be done with sand with thermal resistivity not greater than 2.7Km/W. Kindly confirm if the excavated soil can be used for backfilling provided the thermal resistivity of the excavated soil is less than 2.7Km/W. Please confirm.	Yes. Subject to adequate and relevant tests and approval.



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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
109.	Vol 2 of 2 - Employer's Requirement  Clause 1.7 Terminal Points	<p>Nanyuki Rumuruti</p> <p>The connections of OPGW, conductors and earth wire from the transmission line terminal towers to the underground cable and OPGW terminations on the cable structure including any jumpers or droppers and all other accessories required are included in this Specification.</p> <p>The connections of OPGW, conductors and earth wire from the transmission line terminal towers to line gantry and OPGW terminations on the line gantry at Nanyuki substation including any jumpers or droppers and all other accessories required are included in this Specification. OPGW connection and all terminations from the line gantry to the substation control room are included in this specification</p> <p>The down leads connections of conductors from the 132kV transmission line to ground anchors at the cable sealing ends compound are included in this Specification.</p> <p>The termination of OPGW at the towers and cable structures, including all termination boxes where optical fibres are to be terminated, are included in this Specification.</p> <p>The control and monitoring station for the smart anti vandalism surveillance system for the underground cable shall be located at Kenya Air force base in Nanyuki.</p> <p>The programme for work and work at all the terminal points are required to be coordinated with other contractors/ parties at no additional cost to KETRACO.</p>	<p>As per Clause no 1.6, the termination point for 132kV Cables for Nanyuki- Rumuruki double circuit line is on 132kV Transmission line Towers. Kindly confirm if the 132kV Cable Termination Kit &amp; 132kV Surge Arrestors are to be installed on the existing Transmission line Tower or on Separate Gentries near the Tower and interconnection via Overhead lines.</p>	<p>Shall be installed on separate raiser structure near the tower and to be provided by the bidder.</p>
110.	Vol 2 of 2 - Employer's Requirement  Clause 1.7 Terminal Points	As above	In case 132kV Cable Termination Kit & 132kV Surge Arrestors are to be installed on the existing Transmission line Tower as	Refer to query 109.

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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
			per our query at Sl no 7 above, kindly provide the Tower drawings for estimation of the modification works.	
111.	Price schedule Sch. 1 no 1.3 U/G OPGW		As per price schedule Sl no 1.3, OPGW is indicated for 21km route. We presume the same is Underground Optical fiber cables. Kindly confirm. (NOT OPGW)	It's Underground Optical fiber cables
112.	Price schedule Sch.1 no 1.4   Earthing & Bonding cable		Voltage grade for the Earthing & Bonding Cable's are not specified. Kindly provide the same.	Bonding leads should be as a minimum insulated as 600V class cables and sized based on fault current duty. The level of sheath standing voltage shall be limited to 60 V. The impulse withstand level of the bonding and earthing lead should be 60 kV
113.	Vol 2 of 2 - Employer's Requirement  Clause 1.6.2 Nanyuki Rumuruti Secondary Electrical Works	There exists line protection in Nanyuki and in Rumuruti substations...	Kindly provide the existing CRP drawings and protection setting for the Line bays at Nanyuki & Rumuruti Substations.	The drawings will be provided to the winning bidder. Bidders may visit the site to collect more details.
114.	Vol 2 of 2 - Employer's Requirement  Clause 1.6.2 Nanyuki Rumuruti Secondary Electrical Works	There exists line protection in Nanyuki and in Rumuruti substations...	Scope of works is silent on the Secondary Electrical works for the Nanyuki-Isiolo Single Circuit Line. We presume the same is excluded. Kindly confirm.	The bid should quote is such a way that the supplied portion of the cable will be fully functional at both Nanyuki and Isiolo.



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115.			We presume there are no works pertaining to dismantling of 132kV Overhead lines. Kindly confirm.	Existing towers along the cable route should be dismantled as well as the replacement of the terminal tower for Nanyuki-Isiolo. Materials shall be packaged appropriately and transported to Isiolo.
116.	Price schedule Sch.1 item 2.6 & Technical Specifications, clause no 2.23.3 Straight Joints	<p>2.23.3 Straight Joints</p> <p>The conductor connection will be made using a compression ferrule.</p> <p>The following types of joint only will be considered for offer;</p> <ul style="list-style-type: none"> <li>• Premoulded One – Piece</li> <li>• Extrusion Moulded</li> <li>• Prefabricated Three – Piece</li> </ul> <p>The design of joint will accommodate insulation retraction and expansion.</p> <p>The design of joint will include an internal partial discharge (PD) sensor.</p> <p>The joint shall be provided with an Aluminium joint shell suitable for a metallic seal to the extruded metallic sheath of the cable.</p> <p>Cable joints buried in the ground shall be enclosed in a fibreglass casing and the space between the joint and casing shall be completely filled with bituminous compound of approved grade. Alternative methods of insulating and protecting the joint e.g. heat shrink sleeve, rubber tape, may be offered subject to demonstration of development tests and type tests.</p>	<p>As per Price schedule, PD sensors are to be provided for the 132kV Cable route. We presume, PD sensors are required on each Cable joints in accordance to clause no 2.23.3 and one No. handheld PD Analyser kit for measurement. Kindly confirm.</p>	Yes.

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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
117.	Vol 2 of 2 - Employer's Requirement   Clause 5.3.7 Method of Cable Laying	...The Contractor shall allow for installation of permanent thermocouples for sheath temperature test in his contract price. At least one set of permanent thermocouples shall be installed at every 3000m. The locations, number and arrangement of testing (the number of thermocouples at each location shall be at least seven) shall be submitted to KETRACO for review and approval, prior to installation	As per the referred clause "The Contractor shall allow for installation of permanent thermocouples for sheath temperature test in his contract price". Kindly confirm the actual requirement for this scope.	Thermocouples to be supplied and installed as per bid document.
118.	Vol 2 of 2 - Employer's Requirement  Clause 6 Unmanned Aerial Vehicle (UAV) Specifications	The UAV to be supplied shall be a multi-rotor device, fully customised for the proper inspection of High Voltage Transmission Lines (HVTL) The UAV based fully automated route survey and HVTL inspection system shall be implemented as a human independent, on-board, embedded system. The system shall be able to handle local environmental challenges. In addition to this, the challenges that come with inspection should be incorporated in the system to enable the UAV competently inspect the line. The system should also have a user friendly human-machine interface....	The Requirement for UAV (drone), camera system and associated data collection equipment as per specification clause no 6 is not available in the price schedule. We presume the same is excluded from the scope of work. Please confirm.	One Unmanned Aerial Vehicle (UAV) – Drone shall be supplied as per specifications. Should be added in Sch 4 as item 5.8
119.	Price Schedule 3.6 Cable Smart Surveillance System		We presume that Specification Clause 7. "Detection/surveillance" shall be referred for the system to be supplied and installed under the referred price schedule. Please confirm.	Yes.
120.	Price Schedule 3.6 Cable Smart Surveillance System		As per Clause no 1.7, the control and monitoring station for the smart anti vandalism surveillance system (As per	Yes.

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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
			price sch 3.6) for the underground cable shall be located at Kenya Air force base in Nanyuki. Kindly confirm.	
121.	Vol 2 of 2 - Employer's Requirement  Clause 7 Detection /Surveillance Systems Technical Specifications.	<p>7.1. SUMMARY</p> <p>The contractor shall install a precision locating fiber optic sensor to detect third party interference (TPI) of the underground cable system. The system should also have a cut-immune deployment configuration whereby the system is still able to detect and locate in the event of a sensor cable cut. The system shall also include video-based smart vandalism detection.</p> <p>The system should provide early detection of vandalism of the underground cable system and alert the employer via SCADA and the mobile phone. The system should however not produce nuisance alarms from non-vandalism activities near the cable. The system should combine video cameras, image sensors, vibration sensors, impact sensors and at least one other sensor. The system should detect TPI such as hand and machine digging and presence of heavy vehicles. The system shall detect TPI events that threaten the integrity of the telecommunications cable such as fiber tapping or nearby manual digging, machine digging, or presence of heavy equipment. The system should also be able to accurately locate events even when there are multiple simultaneous events, even when there is environmental noise that is not localized to that area.</p>	The technical specification for Surveillance system includes CCTV system along the cable route. Kindly confirm the same is required.	Yes. CCTV surveillance is along the road reserve and the KDF land fence along the road



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Sl. No.	Ref Clause	Provision as per Bidding Document	Clarification requested/ Query	Response
122.	Price Schedule – Sch. 4 Installation and Miscellaneous Services   Item 2.2 Miscellaneous Prices for Foundation Work and Cable Installation Works.	Special foundation works including pile caps, beams and modification to normal foundation to adapt specified foundation classes to cater for particular soil conditions	We are unable to understand where this miscellaneous item is applicable according to scope and route line. Please clarify	The miscellaneous items have been included in the price schedule to take care of any such works in the event they will be required.
123.	Price Schedule – Sch. 4 Installation and Miscellaneous Services   Item 2 Foundation Installation – 132 kV Cable Riser Structures and Terminal Towers	2.1 Complete foundation and erection (including stub, cleats and setting) and installation of basic tower earthing for the set of cable riser structures and steel frames. 2.1.1 Foundations for soil class C2 2.1.2 Foundations for soil class C3 2.1.2 Foundations for soil class C4	The price schedule mentions “ foundation for soil class C2, C3 and C4. Please clarify.	C2 is weathered rock with bearing capacity between 699 - 400kpa C3 is soil with bearing capacity between 449 - 250kpa C4 is soil with bearing capacity between 249 - 150kpa
124.			We propose to use precast concrete trench to hasten the project. Is it acceptable?	Comply with the bid document specifications provided.



## **Manufacturer's Authorization**

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]*

*[Insert letterhead of manufacturer]*

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

*ICB No.: [insert ICB number]*

*Invitation for Bid No.: [insert number of bidding process]*

*To: [insert complete name of Purchaser]*

### **WHEREAS**

*We [insert complete name of Manufacturer, or Manufacturer's authorized agent], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following goods, manufactured by us [insert name and or brief description of the goods], and to subsequently negotiate and sign the Contract.*

*We hereby extend our full guarantee and warranty in accordance with Clause 21.1 of the General Conditions, with respect to the goods offered by the above firm.*

*Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]*

*Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]*

*Title: [insert title]*

*Duly authorized to sign this Authorization on behalf of: [insert complete name of Manufacturer]*

*Dated on [insert day/date] day of [insert month], [insert year]*