



Kenya Power

The Kenya Power & Lighting Co. Ltd.
Central Office – P.O. Box 30099, Nairobi, Kenya
Telephone – 254-02-3201000-Telegrams 'ELECTRIC'- www.kenyapower.co.ke
Stima Plaza, Kolobot Road

Our Ref: KP1/6A.1/PT/3/19/A72

24th December, 2019

Dear Sir/ Madam

**CLARIFICATION No.2 OF BIDDING DOCUMENT FOR ICB NO: KP1/6A.1/PT/3/19/A72
PROCUREMENT OF DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF TRANSMISSION
SUBSTATION AND LINES (AFD) PROJECT DATED 20TH AUGUST 2019.**

CLARIFICATION TO BID DOCUMENT

The following responses are made to clarifications sought on various issues in the bidding document for procurement of transmission substations and lines and associated attachments.

No.	Bidders Query/Comment	KPLC Response
1.	For the OPGW cable, in the technical data sheet use G655 optical fiber, but in the specification required G652D. Please clarify which one should we follow	This shall be ITU G655 as per clause 8.1 on particular technical requirements for Optic fibre.
2.	VOL II, Page 229, clause 18.2 ' 'VOL I, Page 84, item MB-221 \MB-222 \MB-223 \MB-224' 'Data measuring from the Google map' The length of the routes for each sections is different in those three documents, where the measuring data are '465 m for single core 800mm ² XLPE copper cable from 132kV bay at Kipevu to take off tower' and '680m for 175mm ² ACSR conductor from take off tower to AP2 across the sea' and '2500m for 132kV single core 800mm ² XLPE underground copper cable from AP2 to AP8' and '1794m for 175mm ² ACSR from AP8 to AP22' in google maps, while the 450m and 650m and 1800m and 4000m in VOL II page 229 clause 18.2, and 4500m in VOL I page 84 item MB-221 \MB-222 for 175mm ² ACSR conductor.	Use the measurements as specified in the price schedules Vol. 1 of the issued bidding document and clarification No. 1

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	Please kindly confirm whether the data of routes measuring from the google map can be used	
3.	<p>VOL II, Page 229, clause 18.2.2 ' VOL I, Page 84, item MB-222 In VOL II, Page 229, clause 18.2.2, it is required that The Overhead sections shall be on a self-supporting tubular high grade steel monopoles. The monopoles shall also be designed to carry 33kV double circuit line on ACSR 150mm² conductor along the entire length of the transmission line. While in 'VOL I, Page 84, item MB-222 it is required that the conductor of 33kV double circuit three phase transmission line on monopoles is single 30/7 (Lynx) 175mm² ACSR type.</p> <p>Please kindly confirm which one of the 150mm² ACSR and 175mm² ACSR shall be used as conductor for 33kV double circuit three-phase transmission line on monopoles.</p>	Follow as specified in the Price schedules of Volume I item No. MB -222
4.	For 132kV cable from 132kV bay at Kipevu to take off tower, there is no specification of how the cable shall be installed. Whether the 132kV cable can be directly buried in and out of Kipevu station? Please kindly confirm the required installation of the 132kV cables in this section.	This is specified in clause 18.2.9: 132kV underground cable installation specific requirements
5.	There are no specifications and guaranteed parameters for 150mm ² ACSR conductor. Please kindly provide us the documents for 150mm ² ACSR conductor.	Refer to clauses: 36.2.19/20 and Guaranteed schedules No. 24
6.	Kindly provide impedance voltage of 132kV power transformer and temperature rise , Also impedance voltage of 33kV auxiliary transformer.	Refer to clauses 35 on Particular specifications for Transformers.
7.	<p>The maximum working flux density of power transformer is different, which is 1.9T in page 405 and 1.6T in page 681.</p> <p>Please kindly confirm which one shall be applied.</p>	Refer to Clause 42.1.5. This shall be as specified in the Guaranteed technical particulars(GTPs)
8.	<p>The vector group of auxiliary transformer is different, which is Dyn11 in page 425 and Dyn0 in page 684.</p> <p>Please kindly confirm which one shall be applied.</p>	Refer to issued amendment no. 3
9.	<p>Page 514, clause 39.18.2 Technical Requirements, General It's required that the earthing system shall be constructed and installed to comply with the requirements of local regulations and of the applicable Standards.</p>	Refer to clause 39.18 and related clauses on Earthing of issued bidding document Vol. II

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	Please kindly provide us the mentioned local regulations and standards.	
10.	<p>Page 460, clause 37.4.8.3 Voltage Transformers Page 624 guarantees for Voltage Transformer ,Item 15</p> <p>The burden of 132kV voltage transformer is different, which is 100VA in page 460 and 50VA in page 624.</p> <p>Please kindly confirm which one shall be applied.</p>	Refer to Clause 42.1.5. This shall be as specified in the Guaranteed technical particulars (GTPs)
11.	<p>Page 474, clause 38 PARTICULAR TECHNICAL SPECIFICATIONS FOR CABLES</p> <p>There are two specifications for cables, Please kindly confirm whether the cable designed shall apply both of the two standards or just one of them only.</p>	Clause 38 provides the general requirements for cables design, whereas the attached particular technical specifications give specific technical requirements of each cable to be supplied.
12.	<p>There is no specification of fire safety system for transformer. Whether the oil evacuation and nitrogen injection extinguishing system or water spray extinguishing system is required? Please kindly confirm the fire prevention of transformer.</p>	This shall be as specified in the issued bidding document.
13.	<p>Page 457, clause 37.47 Medium Voltage Indoor Switchgear Page 326, 33KV GAS INSULATED SWITCHGEAR (GIS) There are two specifications for 33kV GIS. Please kindly confirm which one shall be applied.</p>	Specifications for 33kV GIS is only in clause 29, of Volume II.
14.	<p>1. LOT 2. KIPEVU-MBARAKI 6.5KM TRANSMISSION LINE AND 2X45MVA 132/33KV SUBSTATION 2. MBARAKI 2X45MVA 132/33KV SUBSTATION BILL OF QUANTITIES</p> <p>In the technical documents "TRANSMISSION LINES AND SS-VOL (I) - BIDDING DOCUMENT" and "TRANSMISSION_LINES _AND_SS-VOL(II)_-SECTION_VII-", the BOQ range is inconsistent. Please clarify which version is subject to.</p>	Refer to issued clarification No.1
15.	<p>Schedule No. 4. Installation and Other Services, FAT & Training and ESHS "SCADA and Telecom integration to Regional and National Centres" is mentioned in "A) Installation and Other Services-Mbaraki Substation Works", and whether the Kipevu station needs to consider this requirement. Please provide NCC, RCC communication and SCADA manufacturers and models.</p>	Follow as specified in the issued bidding document, clarification No. 1 and amendment No.3
16.	Mbaraki Substation 2X45MVA, 145KV and 33KV GIS	This shall be as specified in the issued bidding document,

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	BOQ mentioned the need for a 33kV Busbar protection and control panel. Please clarify whether this set of protection and control panels is necessary.	clarification no.1 and amendment no.3
17.	Mbaraki Substation 2X45MVA, 145KV and 33KV GIS BOQ mentioned the need for a 33kV Bus coupler protection and control panel, but the single-line diagram of the Mbaraki station shows that there are two 33kV Bus coupler bays. Please clarify the required number of 33kV Bus coupler protection and control panels.	Refer to issued clarification No.1
18.	Mandatory Spares "Programmable CEWE transducers, interposing relays 110V DC" is mentioned in the Mandatory Spares. Please clarify whether this requirement is also complied with in the main equipment, And please clarify the specific quantity and use of the equipment.	This shall be as specified in the issued bidding document
19.	Kipevu–Mbaraki 132kV Line and AIS Bay at Kipevu Please provide the complete technical specifications of the Kipevu station AC and DC system, and please clarify whether the original station 110V and 48VDC power distribution Panels reserve space for the new switch.	Refer to issued bidding document Clause 15.2, 16.9, 30.7, 30.8, 37.5, clarification No.1 and amendment No.3
20.	30.5.2 Scope The technical specifications describe, "The works shall include complete integration of the SAS to existing SCADA System." Please provide the original SCADA system supplier of Kipevu station, software and hardware version number.	Use the information provided for in the issued bidding document, Clarification No.1 and amendment No.3
21.	1. 38. PARTICULAR TECHNICAL SPECIFICATIONS FOR CABLES 2. SCHEDULES 20: GUARANTEED TECHNICAL PARTICULARS FOR LV CABLES The technical specification mentions that the insulating material is XLPE, but the cable parameter table shows that the insulating material is PVC. Please clarify which version is subject to.	The material is XLPE as per issued particular technical specifications for MV and HV Power cables
22.	Does the control room of Kipevu station reserve space for the new Line Bay?	Refer to clarification No.1 and amendment No.3
23.	Please provide the layout of Mbaraki and Kipevu stations.	Refer to clarification No.1
24.	Clause 18.2.7.1 - Relocation of the existing substation access road; Clause 40.19.2 - Access and Internal Roads In Clause 18.2.7.1, the type of the road is concrete; however, in clause 40.19.2, the type is	The existing substation access road to be relocated shall be in concrete as per clause 18.2.7.1, whereas the internal substation access roads shall be as per clause 40. Particular

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	Gravel Wearing Course-GWC. Please clarify which one is correct for the requirement.	technical specifications for Substation Civil works
25.	<p>Clause 36.1.1 - General</p> <p>Clause 36.1.15 - Line Supports and Foundations</p> <p>In Clause 36.1.1, It is mentioned 'Concrete poles shall be used in all cases of 33kV and 11kV overhead lines'. In clause 40.19.2, It is mentioned 'The network shall be supported on wood poles, however alternative supports such as concrete and steel structures may be considered'.</p> <p>Please clarify which type of the poles shall be used?</p>	<p>33 and 11kV Line shall be constructed on concrete poles as specified in clause 36.1.1.</p> <p>Material for support of Substation civil works as per clause 40.19.2 is different from Poles for MV Overhead lines.</p>
26.	<p>Clause 40.31 - ELECTRICAL INSTALLATION</p> <p>It is required that 'A minimum of 2no. fire hydrants shall be provided with proximity to the Transformer in the yard. 2no. fire hose and fire reel shall also be provided on opposite sides of the control building.' However, we did not find such requirements in 'Work Scope' please check and clarify if the fire hydrant system including pumps and water tank is required.</p>	Refer to clarification No.1
27.	<p>In Clause 18.2.7, the control building requires to be refurbishment, during site visit, we were told that a new control building will be built for Kipevu substation, please clarify if the new control building is required or the existing building requires to be refurbished.</p>	Refer to clarification No. 1 and amendment No. 3
28.	<p>Please confirm that the chain link fence is not allowed for the substation, only the boundary is accepted.</p>	Perimeter wall materials for substation shall be as specified in the issued bidding document, clarifications, and amendment.
29.	<p>Issue about new Mbaraki S/S. In bidding document, all involved 132KV Bus bar protection is high impedance principle bus differential protection scheme, including existing GE & ABB provided Bus bar differential relay. And GE's high impedance type bus bar differential relay schemes have been operating healthily in Kenya SHD S/S 33kv double bus bar system years. If high impedance bus differential protection scheme is acceptable for 33KV double bus bar?</p>	Refer to issued clarification No.1 and amendments No.3
30.	<p>Issue about new Mbaraki S/S. In bidding document, there is no detailed requirements about 33KV outgoing feeders' protection function. We note that CT have coils 3&2 for distance and backup protections described in Table 7: 33KV Current transformer requirements: --</p> <p>A) 33KV feeder bay (in page 356). Sometime, O/C type relay is OK for 33kv feeder, we wonder if</p>	This shall be as per the issued bidding document, amendment no.3 and clarification No.1

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	<p>distance function is necessary for 33kv feeder in M S/S.</p> <p>If Over- Current type protection relay with other protection relay with other protection functions is acceptable as bay protection relay for 33KV outgoing feeders?.</p> <p>Please clear required protection functions for new MV S/S 33KV outgoing feeders</p>	
31.	<p>As per clause 10.2.6 (Volume II- Page No.48) of specification, Antitheft bolts shall be used from ground level to the tower anti-climb level. However, as per clause 10.3 (V) (Volume II- Page No 50), anti-theft bolts shall be applied from ground level up to 1 metre above the anti-climbing device. We presume that anti-theft bolts are required from ground level to the tower anti-climb level as per clause 10.2.6. Please confirm.</p>	<p>This shall be as per clause 10.3(v) on tower accessories</p>
32.	<p>As per clause 10.2.2 (Volume II- Page No. 45) of specification, weight span for TT S is 600m at normal working condition. However, as per clause 10.2.3 (Volume II- Page No. 46), weight span for TT S is mentioned as 700m at normal working condition. Kindly clarify whether weight span is 600m or 700m for TT S</p>	<p>The design weight span for S type tower shall be 600m as per clause 10.2.2 of issued bidding document</p>
33.	<p>As per clause 10.2.5 (Volume II- Page No.47) of specification, factor of safety requirement is 1.25 for broken wire condition. Whereas, as per schedule 3 (Volume II- Page No.199), Guaranteed technical particulars for latticed towers and foundations, factor of safety requirement is 1.5. Please clarify the Factor of safety to be adopted under broken wire condition.</p>	<p>This shall be as specified in the Guaranteed technical particulars for Lattice towers and foundation.</p>
34.	<p>We refer to the following conditions on the tender document. The conditions seem to discriminate against the people of Kenya</p> <ol style="list-style-type: none"> 1. Must have completed EPC electrical works of at least 5 substation and Lines of similar size and complexity within the last 10 years <ol style="list-style-type: none"> a. Similar size project have only been done by foreign owned firms 2. (ii) A minimum number of similar⁽¹⁾ contracts specified below that have been satisfactorily and substantially⁴ completed as a prime contractor, joint venture member⁽²⁾. 	<p>Refer to Volume. 1 ITB. 33.1 On margin of preference and Section III, clause 2 on domestic preference:</p> <p>This shall be as per issued bidding document,</p>

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	<p>management contractor or sub-contractor between 1st January 2009 and application submission deadline:</p> <p>a. Similar number project have only been done by foreign owned firms</p> <p>b. Requirement to have done a 14M EURO Project is not possible as non has been awarded with such value except for foreigners</p> <p>3. Lot 2 132kV GIS(or higher voltage) of at least 3bays in any two (2) years</p> <p>a. Such EPC works have only been done in Kenya by Foreign firms for purpose of GIS</p> <p>4. Should have completed installation of 33 kV cable feed outs in a substation of more than 6 cable feed outs. in any two (2) year</p> <p>a. Only Kipevu 33 KV has GIS with cable feed outs. So no possibility to meet this criterial</p> <p>5. Should have successfully completed 10Km of 132 kV line of self-supporting monopole in a town/city in any two (2) year</p> <p>a. In Kenya there is no line at 132 KV done with self-supporting mono poles</p> <p>Could an exception be done for local and citizen bidders, who have not been exposed to large projects due to what they have been awarded in the past</p>	<p>clarifications No.1 and Amendment No. 3</p> <p>Domestic preference shall not apply.</p>
35.	<p>For local citizen Must have participated in EPC electrical works of at least 1 substation and Lines of similar size and complexity within the last 10 years</p> <p>Where's size is land area</p> <p>- Length of route for a line on Monopole (where monopoles is concrete or wood) which is what has been done in the past.</p> <ul style="list-style-type: none"> - Voltage class HV i.e. 66 kV/132KV - Transformer of rating classified as HV ie 66 Kv or 132 kV (Note 5MVA, 23MVA , 45MVA , 90MVA have the same complexity and components) - Cables classified a MV cable 11KV /33 KV <p>Other</p> <ul style="list-style-type: none"> - GIS installation to be supervised by manufacturer if need be - Quality process that has delivered projects may or may not have ISO 9001 	<p>Domestic preference shall not apply.</p> <p>This shall be as per issued bidding document, clarifications No.1 and Amendment No. 3</p>

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	<ul style="list-style-type: none"> - Policy and procedures Environmental management may or may not have ISO 14001 Certifications. Have implemented and EIA plan even if they did not do the EIA study i.e. has not defaulted on an EIA plan - Policy and procedures Health and safety management have the legal DOSH certification may or may not have ISO 45001^[3]. - Turnover requirement 50% of international bidders eg 8M EURO or evaluated based 50% of bid price eg if Bid price is 10M, requirement to be 5M - Available cash requirement on 3 month average of Bid price so 3/24 so for 10M it would 1.25 m. But the figure to be based on bid price <p>We would appreciate if the following could be resolved with financier</p> <ol style="list-style-type: none"> 1. That it is not rocket science to supply and install a GIS in terms of technology. Which when manufactured as per specifications all that is needed to be shipped, placed and bolted on a foundation/plinth, bolted, assembled as per installation manual, Fill Gas and terminate with HV and MV cables. The works on the control cables are connected to control panels this is similar to what is done in an AIS only that this time cables much shorter 2. In Kenya Masts similar, much taller to Monopole has been installed and the technology of Pole erection is not specific to line construction. 3. Line stringing of 175 mm sq and larger Conductors and OPGW have been done before by Kenyan firms 	
36.	ITB 14.7: We understand that the taxes and duties indicated in the price schedules shall not be used for evaluation of the contract and the amount mentioned therein for the taxes and duties are for reference purpose only. Please confirm	Refer to clarification No.1 and amendment No.3
37.	ITB 14.7: we understand that the employer will reimburse all import taxes and duties as applicable from time to time for the items covered under schedule I based on actuals and shall not be limited to the taxes mentioned in price schedule I. Please confirm	Refer to clarification No.1 and amendment No.3

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38.	GCC 14.1(b): We understand that this clause is applicable only for the schedule 4 activities. Please confirm	Refer to clarification No.1 and amendment No.3
39.	PCC Part A – 4.2: Please clarify whether the performance security is to be given on price schedule –“factory acceptance test and training” and for price schedule – “environmental, social health and safety(ESHS)	This shall be as per issued bidding document clause 4.2 of PCC-Part A
40.	PCC Part B – 4.4: We understand that no subcontracting is allowed for the whole of the works. However, the contractor is allowed to subcontract the part of employer or as stated in the list of the suppliers and subcontractors submitted by the contractor during bid submission. Please confirm	Follow as specified in the issued bidding document, clarification no.1 and amendments.
41.	PCC Part A – 14.1: We understand that the quantities indicated in the price schedule for Lot 1 (transmission line) are estimated and for evaluation purpose only. Further, we also understand that under PCC Clause 14.1 Part A, contractor shall be paid for the actual quantities of work based on approved design drawings and no separate variation order is required for the actual quantities. Please confirm. certain quantities are mentioned in the price schedule for Lot 2(SS). We understand that the quantities indicated in the price schedule for Lot 2(SS) are estimated and for evaluation purpose only. Further, we also understand that contractor shall be paid for the actual quantities of work based on approved design drawings and no separate variation order is required for the actual quantities. please confirm	This shall be as specified in the issued bidding document, clarifications and amendments: However, the transmission substation works component shall be on lump sum basis whereas the transmission line works shall be on admeasurement contract basis.
42.	PCC 14.1(b), Part A: We understand that since the access to the site will be provided within 30 days from the contract signing date, the contractor will submit the breakdown of the unit price for the lump sum portion after 30 days from the contract signing date. We also understand that the breakdown of the unit prices shall be revised based on the detailed designing. Please confirm	Follow as specified in the issued bidding document, clarification no.1 and amendments.
43.	GCC 13.3: We understand that any Variation in the Works shall be carried out by Contractor only after approval of Variation Order from Employer. Please confirm.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
44.	GCC 13.5 and GCC 13.6: We understand no Provisional Sum and Day work is applicable for both the Lots. Please confirm.	Follow as specified in the issued bidding document,

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		clarification No.1 and amendments.
45.	PCC 14.7, Part A: We understand payment to Contractor's bank account will be made through Letter of Credit. Please confirm.	Follow as specified in the issued bidding document, clarification No.1 and amendments..
46.	U/G Cable Works and 33 kV OHL:- We understand that there will be 10 No of 33 kV Feeders: 1. Each feeder of approx 1 Km to be constructed on 33 kV OHL 2. Each feeder connected by 1 Km of 800 Sq mm Copper Cable; power supplied from 33 kV GIS Switchgear at S/S	Follow as specified in the issued bidding document, clarification No.1 and amendments.
47.	Distribution- 33 kV:- We understand that the Line is near Coastal region, please advise whether we have to use insulator which can be used for higher altitude upto 2200. Also advise the creepage distance to be considered for this.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
48.	Volume II, Part 2, Section VII, Clause 18.2 and 25.2:-As per Tender Specification Volume II, Part 2, Section VII, Clause 18.2, It is mentioned that the self-supporting monopoles shall also be designed to carry double circuit 33kv line on ACSR 150mm ² conductor along 80% of the Line length. And in Clause 25.2, it is mentioned that the monopole shall be designed to carry two circuits of 33kv line below the 132kv circuit. Kindly confirm whether the tender design involves design of multi circuit monopoles. Also we would like to propose the use of narrow base towers instead of tubular mutli circuit monopoles. Please confirm.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
49.	Volume II, Part 2, Section VII, and Clause 25.2- Drawings of Monopoles: As per Tender Specification Volume II, Part 2, Section VII, Clause 25.2, It is indicated that the Monopoles shall have "the general arrangements and configurations shown in the drawings included with the attachment. Also the clearances are specified in the drawings". Kindly provide us the above-mentioned drawings missing in the specification.	Refer to Attachment No.1- Volume II : Narok-Bomet and Kipevu-Mbaraki Line
50.	General - Narok & Bomet Substation: As per cl no. 16.11.3 we have considered Composite Polymeric Insulators only, for conductor stringing inside substation.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
51.	General - Narok & Bomet Substation-Main Bus is of Twin ACSR Conductor. Please Confirm. Also, provide data for Sub-conductor spacing. Dropper is of Single ACSR Conductor. Please Confirm.	Follow as specified in the issued bidding document, clarification No.1 and amendments.

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52.	Narok & Bomet Substation: Lightning Protection - Lightning protection shall be provided with the help of shield wire. As LM is not envisaged in Bay Extension scope of work.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
53.	Narok & Bomet Substation: Control & Power Cabling Kindly Confirm the below Points: =>All power & control cables required for switchyard shall be considered for bays under present scope of work. =>.Power & Control cables in switchyard shall be laid on cable support angles. => Isolator, CT & CVT cabling will be provided in PVC pipe. These PVC pipes will be connected to nearest cable trench.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
54.	Narok & Bomet Substation:- Please provide the SLD for control relay panel of the existing system. Also furnished the detail of existing make of CRP, SAS & Telecom system. We assume the existing SCADA & Telecom is capable of accommodate the new bay, only contractor has to integrate the new bay with existing SCADA and Telecom. Please confirm our understanding is correct.	All necessary information and SLD for bidding have been provided in the issued bidding document, clarification and Amendment Follow as specified in the issued bidding document, clarification No.1 and amendments.
55.	Narok & Bomet Substation - Remote end Telecom system requirement: We have excluded, if any, remote end telecommunication equipment supply, erection, testing and commissioning work.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
56.	As the inland route road shall be constructed by the bidder inside the substation premises, however the width of roads are not mentioned in the document issued with the tender documents. We request you please confirm the road width detail inside the substation in this regard.	Refer to issued bidding document on substation Civil works and Substation SLD layout provided for Narok and Bomet.
57.	As per our understanding through the tender documents provided we assume that there is a scope of extension of existing Bus bar for Narok and Bomet S/S, Kindly confirm the length as per incomer line bay and type of support structure for the same.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
58.	Clause No. 32.2 & 32.3_ Factory Test & Training: We understand that FAT and Training charges will be born be by KPLC. Please confirm our understanding is correct.	Follow as specified in the issued bidding document, clarification No.1 and amendments.
59.	The Technical Specification of All the major items are not available along with tender document. Please furnish the same.	Refer to issued bidding document Volume II, Amendment No.3 and Attachment No. 2 of Volume.

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		II- Particular technical specifications.
60.	"Amendment No.3, Section II. Bid Data sheet, ITB 14.7 & Revised of Letter of Bid, clause e)"The bidder shall not identify in the bid price as a separate amount, the VAT payable under the contract; whereas the bid form, The total price of our Bid, excluding taxes (Import Duties, Import Declaration Fees, VAT and Railway Development Levy). The VAT payable under the contract shall be shown separately in Schedule No.5-Grand Summary is acceptable. Please confirm	Follow as per issued amendment No.3 and issued clarification No.1
61.	"Amendment No.3, Section II. Bid Data sheet, ITB 35.2 & Part A : Contract Data, Contract Price, Clause 14.1 (b) and Clarification No.1, Point No.6, 247 and 292," Withholding tax is payable by all contractors; whereas the clarification No.1, Withholding tax is not listed in the relevant taxes/fees for imported good for this project. Hence Withholding Tax for Schedule No.1-Plant supplied from abroad is not applicable. Please confirm.	Withholding Tax is a Direct Tax on the contractor and it is applicable. The listed taxes are Indirect Taxes
62.	The full cost of the air tickets, transportation and accommodation including per diem allowance for FAT will be borne by KPLC. Other expenses local transportation, Food expenses, visa charges etc. at FAT premises will be borne by contractor. Please confirm.	This shall be as per issued clarification No.1
63.	"Clarification No.1, Point No.88, SECTION VII-WORKS REQUIREMENTS- 15.24-FACTORY TEST AND TRAINING" The full cost of the air tickets, transportation and accommodation including food, for Training will be borne by Contractor. Please confirm.	This shall be as per issued clarification No.1
64.	"Clarification No.1, Point No.88, 15.24 SECTION VII-WORKS REQUIREMENTS- 15.24-FACTORY TEST AND TRAINING" Per diem allowance for Training is not applicable. Please confirm. If applicable, kindly provide the amount to be paid per day.	This shall be as per issued clarification No.1 and issued bidding document
65.	"Amendment No.3, Volume II: Section VII-Works Requirement.1.b.ii- Kipevu Old Control Building" Roof of building Shall be pitched type. The main roof of the building will be in the form of roof sheets with steel trusses. Please confirm.	The roof shall meet specification for Substation switchgear building provided in clause 40.4
66.	Schedule No. 4a. Installation and Other Services MB-409 Substation new Perimeter mason wall	The part of the wall to be reinstated is for the substation

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	<p>(100m), Reinstatement of existing perimeter mason wall (50m), Gate, Guard house and toilet etc. As per provided site layout, the length of the perimeter comes 320 meter. Please confirm the length of the Perimeter mason wall to be constructed & Reinstatement in MBARAKI substation</p>	<p>and shall be as specified in the issued bidding document.</p>
67.	<p>MB-003/002: There are 3phase voltage transformer, feeder disconnectors&earth switch , fast acting earthing switch in the BOQ, but there isn't any in the drawings, please clarify; and</p> <p>Also please clarify it's SF6-air termination or cable termination?</p>	<p>Refer to clarification Item No. 160. The provided GIS SLD is for guidance and not all component of GIS can be shown. Fast earthing switches are required as per 132 and 33kV GIS particulars technical specification provided</p> <p>Termination of the GIS Cables shall meet the requirement for the Gas insulated switchgear as per issued bidding document clause 36 and 41.</p>
68.	<p>ACFR conductor is specified for Kipevu-Mbaraki line, we understand ACCC/ACC Aluminium Conductor Composite Core conductor is the same. Kindly confirm</p>	<p>The conductor has composite carbon core hence is same conductor; the name is dependent on manufacturer.</p>
69.	<p>For composite insulator and post insulator in the technical table, we did not find the detailed quantity in the BOQ in the bidding document. Please give the quantity or confirm whether the technical table needs to be modified.</p>	<p>These are fittings and accessories for the substation and Line works and should be costed as Lot as specified in Item No. MB-207 and MB-221 of issued amendment No. 3</p>
70.	<p>In the BOQ MB-032 and MB-033 there are 10km 33kV Line, but in the tender document we did not find it, so please clarify where is this 10km 33kV Line.</p>	<p>Refer to issued bidding document Volume II Clause 34., amendment No. 3 and clarification No.1</p>
71.	<p>Telecommunication system: It seems only two units SDH STM-4 and please clarify as below</p> <p>- Please provide topological graph.</p> <p>- Two unit SDH STM-4 as Kipevu and Mbaraki?</p>	<p>This shall be as per issued bidding document, clarification no.1 and amendment</p> <p>Refer to clause 39: system architecture of Substation automation</p>

No.	Bidders Query/Comment	KPLC Response
	<ul style="list-style-type: none"> - Do need E1 interface? If yes, how many port and what impedance? - How many port of Ethernet - Do need low speed interfaces such as V35, V36, RS232...etc. If yes, please let us know more information - Do need integration to existing KPLC NMS? - Do need configurability from existing NMS? - Currently existing SDH FOX 515 need to do Interoperability test? - How long transmission distance 	<p>Refer to clause 23.10 on Fibre terminal equipment and related clauses in the issued bidding document</p> <p>SCADA and Telecom integration to the existing systems is required as per issued bidding document Integration of new and existing system is required as per issued bidding document</p> <p>Line distance is provided in the issued bidding document</p>
72.	Please confirm equipment type test report and certificate of similar or higher voltage levels and/or capacities can be acceptable to KPLC.	Type test report and Certificate shall be for the capacity and Voltage levels of equipment required as per issued bidding document and clarification
73.	We refer to tender No. KP1/6A.1/PT/3/19/A72-Lot 1&2 , and would like to request for an extension to the new closing date the 28 th February, 2020 be granted	The closing and Opening date shall be as per issued amendment No. 2
74.	Plot and Layout Plan: Overall plot drawing and substation layout drawing indicating GIS/control building, Transformers / outdoor equipment, are not received with tender document. Please provide substation layout.	This is in detailed design scope by the contractor. Bidders to use the preliminary Mbaraki substation plot and Line route drawings provided in the issued bidding to prepare their bid
75.	GIS / Control Building: "Preliminary drawing provided in tender document. However, building dimensions are not provided in drawings. Minimum details such as length and width envisaged for building along with minimum heights to be maintained for GIS area and control building floor are required. Please provide detailed drawing."	This is in the detailed design scope by contractor for employer approval. Typical GIS switchgear building provided is for guidance and bidding purpose only.
76.	Under clause no. 18.3.2, minimum temprature is mentioned as +10 whereas under clause 28.6, min temprature is mentioned as -1 deg. There is descripancy in average temprature as well in these clauses i.e 34 deg and 30 deg. Please clarify.	Parameters provided in clause 28.6 are minimum specific design data service condition for the offered equipment, Whereas the data provided in clause 18.3.2 are general climatic condition to be

No.	Bidders Query/Comment	KPLC Response
		considered for bidding purpose only
77.	Under clause no. 18.3.2, altitude is mentioned as 0-500 m a.s.l. whereas under clause 28.6, same is mentioned as 1000 to 2200 mtrs. We presume that altitude is less than 500M a.s.l. and all technical parameters to be considered accordingly.	Refer to clarification No. 2. All High and Medium Voltage equipment shall be designed for installation at altitude of 2200m as per issued bidding document
78.	Power transformer capacity 132/33/11kv:- We understand that 11kV winding is unloaded and shall be only for stabilizing purpose as stated in price schedule.	This shall be as per issued bidding documents, clarification no.1 and amendment.
79.	145kV GIS, Single Line Diagram: Bus Disconnecter with E, Please confirm location of Earth-switch for Busbar disconnectors with ES. Busbar side of CB side. One ES is indicated on bus side whereas other is indicated on CB side.	The SLD is for guidance and bidding purpose only. Position of the Busbar Earth switch shall meet the GIS specification given in the issued bidding document and internationally accepted standards for HV GIS
80.	As per price schedule, feeder disconnector with ES shall be considered. However, in Single Line diagram same is missing. Also as per price schedule, disconnectors in bus coupler bay shall be with ES, however as per SLD same are without earthswitch. Please clarify.	Refer to clarification No.1 Provided SLD is for bidding purpose only and not all component of GIS can be shown. GIS shall meet specifications provided in the issued bidding document, clarification and amendments.
81.	145kV Double Busbar and Bus CVTs are missing in price schedule. Please revise.	Refer to issued price schedules amendment No. 3 Item MB-001, 002, 003, and 004.
82.	Price schedule Sr. MB-011 states that "132KV Circuit breaker protection and Control Panels with BCU". However Protection panels are already covered in under Sr. MB-007 to MB-010. Hence MB-011 shall be only control panel with BCU for Line and Transformer bays. Please confirm.	This shall be as per issued bidding document, clarification No.1 and Amendment No.3
83.	As per price schedule one no Bus coupler bay is required. However, in SLD two nos Bus coupler bays are indicated. We presume that one no bus coupler bay as per price schedule is correct. Please revise Single Line Diagram.	Refer to clarification No.1
84.	Ratings are not mentioned in price schedule. In case of any ambiguity in ratings between specification & Technical Data Sheet, Ratings and data mentioned in Technical Data Sheet to be considered which shall supercede specifications. Please confirm.	This shall be as per technical specifications in the issued bidding document, clarifications and amendment

No.	Bidders Query/Comment	KPLC Response
85.	<p>As per price schedule, separate control and protection panels are mentioned for 33kV Indoor GIS. As per standard practices, control and protection IEDs, meters etc are installed in LV compartment of MV switchgear oanel. Hence separate control and protection panels are not required.</p> <p>Please confirm installation of control and protection IEDs, meters in LV compartment of 33kV GIS and delete separate control protection panels for 33kV GIS.</p>	<p>This shall be as per issued bidding document, clarification No.1 and Amendment No.3</p>
86.	<p>Price schedule Sr. MB-021:- 33kV Panel for auxiliary transformer contains CT for bay protection and same shall be used for HV protection tripping. Please clarify separate CT requirement in control and protection panel.</p>	<p>Follow as specified in the price schedules and Bill of quantity</p>
87.	<p>Tapping range of HV winding is $\pm 8 \times 1.67$ i.e. $\pm 13.33\%$. As tapping range is in fraction, thus this will involve more ratio error than standard tapping step of 1.5%. Please confirm tapping step.</p>	<p>This shall be as per issued bidding document, clarification No.1 and Amendment No.3</p>
88.	<p>Transformer important technical parameters are missing. For example: No load losses, Total load losses, Impedance, Oil & Winding Temperature rise,</p>	<p>No Load loss and Total loss is in the design scope of the manufacturer /contractor and shall be guaranteed and capitalised as per issued bidding document.</p> <p>Refer to transformer particular technical specifications for Impedance and Oil & Winding Temperature rise.</p>
89.	<p>Feeder details & SLD for LV-Distribution system is not provided</p>	<p>This is in the detailed design scope by the contactor</p>
90.	<p>Vector group mentioned in GTP for 45MVA 132/33/11KV is YNyn0dn1. It shall be YNyn0d1. Please confirm.</p>	<p>Follow as specified in the issued bidding document, clarification No.1 and Amendment No.3</p>
91.	<p>Vector group mentioned in GTP for 200KVA 33/0.433 kV is Dyn0. It shall be Dyn1 or Dyn11. Please confirm.</p>	<p>Refer to clarification No.1</p>
92.	<p>There is a mismatch in sr.no 18 number of HV plus, minus tapping and sr.no 19 HV steps in % of rated voltage. Please confirm total tapping range and step percentage variation.</p>	<p>This shall be as per issued bidding document, clarification No.1 and Amendment No.3</p>
93.	<p>If inside substation, MB-033, 10Km quantity not correct (Same may be 0.1Km.) as 10Km OPGW already considered in Sr. MB-036A below.</p>	<p>Refer to clarification No.1</p>

No.	Bidders Query/Comment	KPLC Response
94.	Please confirm, whether training required for Transformer, CRP-SAS.	Follow as per issued bidding document, clarification No.1 and Amendment No.3
95.	Item no. MB413 – 33kV UG cables are given as 10km and where as it is not reflecting in sch. 1 (supply).	Refer to clarification No.1 and Amendment No.3
96.	As per clause 29.4.1, 40kA Rated short-circuit withstand current is mentioned, whereas clause no. 28.2 31.5kA Rated short-circuit withstand current is mentioned. Please confirm.	Refer to clarification No.1
97.	Specified duty cycle without derating: O – 0.3 s – CO – 15s – CO. In GUARANTEES FOR 145KV CIRCUIT BREAKER having O – 0.3 s – CO – 3min – CO Rated operation Sequence. Please confirm.	Circuit breaker rated operation sequence shall be: 0-0.3sec-CO-3min-CO as per issued Circuit Breaker technical particulars
98.	Line Bay CVT quantity is not mentioned in price schedule. Please confirm requirement and revise price schedule.	This shall be as per the issued Amendment No.3 and clarification No.1
99.	Please note that the Busbar conducting material required for 132kV GIS is copper. However all the OEMs have regretted to offer the product as they do not have it in their manufacturing range & relevant Type test reports are not available? Please confirm whether 132kV GIS can be offered with Aluminium Bus bar is acceptable.	Refer to clarification No.1
100.	Line Bay CVT quantity is not mentioned in price schedule. Please confirm requirement and revise price schedule.	Follow as per issued amendment No.3
101.	As per scope, only one Line bay extension is in scope. However new 110V/315AH and 48V/200AH battery and chargers are mentioned. Please clarify usage of these battery and charger system.	Refer to issued bidding document and clarifications No.1
102.	SDH capacity of STM- 4 is specified in clause no. 23.10.1 and STM 1 is specified in clause no. 30.6.1. Please confirm.	Follow as per clause 23.10.1 specific requirement for SDH multiplexer for the Kipevu-Mbaraki Line.
103.	Layout drawing for existing Kipevu substation and proposed extension scope is not available with tender document. Please provide same.	Refer to issued clarification No.1 Bidders to use the Provided SLD for Kipevu 132KV line Bay
104.	The existing relay for the bus bar protection is a solid-state relay. But solid state relays are outdated nowadays. Thus we may face some difficulties in busbar integration for new bay. We recommend for busbar protection panel with Numerical relay.	Bus bar protection relay panel with Line differential relay is required as well as integration of the new and existing Bus bar protection as per issued bidding document and clarification
105.	As per clause 39.16.1, (b-vi): replace existing old static & electromechanical relays with Differential	Follow as specified in the clause.

No.	Bidders Query/Comment	KPLC Response
	Numerical relay. Please confirm it is applicable for Distance relay and O/C,E/F back up relay also.	
106.	There is contradiction in clause 39.16.1, (i) and 39.16.2 (i) regarding Main 1 & Main 2 protection between Differential and Distance relay. Please confirm.	Refer to clarification No.1 and amendment No.3
107.	For Mbaraki, As per Specification clause 34.4. MB028 & MB029, 2 no. 110V & 2 no. 48V DC distribution supply system with auto change over switch is specified. Whether Two Batteries are required or 1 battery, system is acceptable.	Refer to clarification No. 1 and amendment No.3
108.	As per standard practice, VT shall be provided on Power Transformer HV side. Please confirm.	Follow as specified in the Issued bidding document, clarification No.1 and Amendment No.3
109.	Sr. no. 25, Uniform Insulation is specified for all windings. For Star connection winding insulation type is graded and for delta connection winding insulation type is Uniform. So for HV & LV winding insulation type is graded and for TV winding insulation type is uniform. Please confirm	Follow as per the Issued bidding document, clarification No.1 and Amendment No.3
110.	Electrical endurance class E2 is applicable for voltage rating $\leq 52\text{kV}$ circuit breakers and E1 is applicable for HV circuit breakers as per IEC62271-100	Follow as per the Issued bidding document, clarification No.1 and Amendment No.3
111.	Vendor shall submit seismic calculation report. But seismic test shall not be performed and also it is not required by IEC 62271-203. Please confirm.	Refer to clarification No.1
112.	Mechanical shock indicators (Accelerometers) shall be provided on the packages instead of electronic impact recorder.	Follow as per the Issued bidding document, clarification No.1 and Amendment No.3
113.	For Kipevu, As per Specification page no. 468, Two Battery chargers and Two Batteries are specified. Whereas as per clause 34.5, 1 no. Battery charger and 1 no. Battery is specified. Please clarify	Refer to clarification No.1 and amendment No.3
114.	As per clause 36.2.6, We shall offer porcelain Bus post insulator and porcelain insulator for Disconnecter/CVT etc. Please confirm	Refer to clarification No.1 and amendment No.3

Yours faithfully,
For: KENYA POWER & LIGHTING COMPANY LIMITED.


JOYCE OCHIENG
Ag. GENERAL MANAGER, SUPPLY CHAIN