Kenya Power

The Kenya Power & Lighting Co. Ltd.
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Our Ref: KP1/6A.1/PT/6/16/A52 *12th* **October, 2016**

Dear Sir/ Madam:

AMENDMENT No. 1 OF BIDDING DOCUMENT FOR ICB NO: KP1/6A.1/PT/6/16/A52 DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF SCADA EQUIPMENT AND ASSOCIATED TELECOMMUNICATIONS SYSTEM TO INTEGRATE SPECIFIED DISTRIBUTION SUBSTATIONS TO EXISTING SCADA SYSTEM ISSUED ON 11th AUGUST, 2016.

1.CLARIFICATION TO BID DOCUMENT

The following responses are made to clarifications sought on various issues in the Bidding Documents for Procurement of SCADA Equipment and associated telecommunications system

No.	Query	Response
1.	Can KPLC please provide clarification on the locations where GPS clocks will be required. • A least one site already has a clock. • At some of the smaller sites time synchronisation via the comms links presumably provides sufficient accuracy.	The internal clock of each RTU shall be synchronized either from, a Contractor supplied and installed time synchronization source, such as a Global Positioning System (GPS) for bigger sites(above 20MVA)
2.	During the Lot 1 site visits, KPLC indicated that it would be possible to install some of our equipment in existing cabinets. However, there may be warranty issues with the original equipment supplier if we do this. Therefore, can KPLC please indicate - on a per-site basis - where this type of installation for Telecoms, SCADA, Charger equipment can be done?	Bidders have option to reuse the existing spaces in the cabinet where available. However the equipment should be in their respective separate cabinets

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3.	Can KPLC please provide an up-to-date Comms network diagram including. • Total number of cores in the fibre cables. • Number of unused cores in the fibre cables. • Number of available fibre ports on the existing multiplexers.	KPLC confirms adequate number of cores available where Fibre optic cable is existing. Bidders are responsible for verifying the Existing Telcom Infrastructure and do their design. Attached is KPLC existing Telcom network block diagram
4.	Can KPLC please provide up-to-date Single Line Diagrams (SLD) for all the Lot 1 substations visited as part of the SCADA and Telecoms upgrade tender?	SLDs attached as part of Attachment 1
5.	I believe that during the Pre-bid meeting, KPLC promised to issue minutes and the attendance register. Can this be provided?	The MoM will be circulated to all bidders
6.	We are discussing the tender spec and I like to present you briefly a possible scenario. Please find attached possible solutions. To avoid intensive works on the existing panels, by modifying them with L/R switch, transducers and interposing relays I thought to have a solution where tis functions are integrated already. This would help to shorten the outage times of the feeders and discussions of existing schemes, nonfunctioning aux relays and so on. We are checking possibilities of 2 solutions beside the pure conventional solution you have specified. 1. By using a centralized BCU (REC670) for the whole voltage level the local mimics will be out of service and the HMI on the REC670 is not very comfortable as it will be for all feeders on different pages on the HMI. Therefore I would quote a Touch screen PC 19", where both SLD's (33 and 11kV) will be shown. 2. Replacing the mimic with a new BCU REF615 will have the advantage the you would have a dedicated IED for each feeder. HMI will replace the existing mimic and no Touch screen PC will be needed. Would it be acceptable for you. Which solution you would prefer? Or shall we follow 100% your Spec to be considered as a supplier?	Bidders to come up with optimal design solutions.

No.	Query	Response
7.	There is no existing 48VDC in 11kV Donholm substation, while there is no requirement of 48VDC, kindly confirm There is existing Optic Fiber in 33kv Embu, While in the price schedule it mentioned the requirement of FO. Kindly confirm	Bidder supply as per the specifications in the tender For Embu 33/11kV Fibre Optic cable shall be removed from the scope of supply
8.	During the Lot 1 site visits, KPLC did not mention any Protection equipment supply and installation. Can you please confirm that there are **no** requirements for protection equipment supply and installation in Lot 1?	Not required
9.	1. Schedule: We are preparing to submit a proposal to Lot-3 in KPLC tender KP1/6A.1/PT/6/16/A52. Lot-3. Site visit is taking place the week of 04-09 Sep, while in the tender documents it was expected that the site visit will be completed by 2nd of Sep. The current tender submission schedule does not allow reasonable time to submit technical clarification questions. In addition, we estimate that the required time to prepare and design the response to Lot – 3 will require additional preparation time. 1.1 We ask to extend the clarification question due date to 20th September 2016. 1.2 We ask to extend the bid submission date by 1 month to date 5th November 2016. 2. Security Forms: In all forms of requested securities (1-150, 3-107, 3-109) appears the below paragraph: At the request of the Bidder, we _____ hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder: We ask to change the terms of payment by the bank to have 7 days after receiving your first demand in case of breaching the obligation- as acceptable. Need to change the words "upon receipt by us..." to "within 7 days from receipting your first demand in writing..	1. **The deadline for the submission and opening of bids has been extended from 5th October, 2016 to: 16th November, 2016** 2.Not acceptable

No.	Query	Response
10.	Is it legal if the Bidder's subcontractors provide their own qualification certificates or related documentary evidence?	Bidders provide all necessary document as per the specifications
11.	What's the meaning "YES"and "NO"in the column "SCADA Installation" in Table 1-1 of the Bidding document?	'Yes' means supply new equipment, Install and Integrate to the central system. 'No' means Integrate existing equipment to the central system.
12.	Is the summary No. of "25% of sub-Total for Future signals" calculated by each individual substation in Table 1-1? Should the bidder provide the equipment in the bidding document as per the Signal No. in the Table 1-1?	As per section VI, the bidder shall supply 25% spare capacity for each type of data per station
13.	There are Nos 16 substations with the existing RTU/SAS in the "Table 1-1", and there are Nos 8 existing RTU/SAS that should be expanded in the table 2-5. And how about the other 8 existing RTU/SAS which was not mentioned to be expanded, What's the rehabilitation solution?	For the other 8 there is no RTU expansion required
14.	What's the typical rule of interlocking?	This shall be clarified case by case during detailed design stage.
15.	Does "Pre-set control" mean "Present-check-execute"?	No. Refer to detailed description of section VI clause 1.6
16.	What 's the meaning of "Doors shall be provided with a lock which may be opened by a person within the panel without the use of a key"? Does master key mean one master key that is able to open all the RTU doors?	This is a safety requirement of opening panels from inside. Master key shall be able to open all RTUs doors or panels
17.	What is the interface between RTU and Power Supply System, Protocol or hardwiring? If protocol is applied, please clarify the request protocol.	This is for the bidder to design depending on the equipment supplied
18.	What's the use of time relay? Please clarify detailed requirement of time relay.	Timers that maybe required in adaptation works
19.	Is there any other protocol used in the current existing RTU? If yes, What's it?	Kenya power uses only IEC 101 and IEC 104 for RTUcommunication to central system
20.	What kind of feeders should be used for collecting energy metering data in each substation? The description here is not clear.	Incoming lines and transformer bays
21.	What's the time resolution requirement of "Sequence-of-Events (SER)"? Is there any accurate specification of this time resolution requirement?	Refer to clause:1.8.3.2 Functional requirements for new RTUs
22.	What's the requirement of synchrocheck relay? Please clarify the technical specification	Tie lines and Generating stations. In this scope we have only Turkwel S/S, Orpower, EPZ and Soilo
23.	What's the technical specification of latching relay?	No specifications are given.

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24.	What is the technical specification of cable trench?	
25.	What's the role of RTU support IEC 61850 protocol, as Client or Server?	Server
26.	Do we need to support IEC 61850 for the substations for which the IEC 61850 devices are not available?	Bidders to decide based on their design
27.	What's the meaning of legacy and cutting edge?	This refers to old and new RTU communication protocols respectively
28.	What's detail scope of CC work for the contractor's expert? Are configuring database, report and END to END test with RTU in the control center the contractor's scope?	Yes
29.	The new devices are necessary if the contacts are not sufficient. Is it the responsibility of the contractor to provide them to expand the contact? Does the contractor decided the way how to integrate the signal point?	Yes
30.	Is it possible using the contractor's new RTU to integrate with the existing SAS/RTU data and send all the data to the control center in the substation which will be rehabilitated?	Bidders to decide as per their design
31.	What's the type of DI? Are the position of CB and switch the DPI(Double Point Input), and the alarm and other signals SPI(Single Point Input)?	Yes
32.	Are all the energy inputs Pulse type?	Yes
33.	Is it possible to use MFM instead of MFT to acquire the analogue measurement and energy data?	Bidders to decide as per their design
34.	Is there LDMS (local data monitoring system) available in the existing RTU/SAS substations, if it is available, do we need to integrate with these system?	No
35.	What is the excepted solution for time synchronization? Does it synchronize from control center by IEC101 or GPS clock in the substation?	Refer to answer to question no 1
36.	Would you please provide the existing transmission lines information including tension tower and suspension tower quantity, the voltage of line, the maximum span of tower, tower height.	Bidder to perform detailed survey
37.	Would you please provide the specification of OPGW?	Detailed specification are in attachment 2 and 2B.
38.	The distance of 132KV power lines is not mentioned in the bidding document, could you please provide the distance?	No OPGW is to be installed on 132kV line. Only on 220kV
39.	Could you please provide the quantity of tension pole and suspension pole quantity? We need to refer to the information to confirm the quantity of hardware.	Bidder to perform detailed survey

No.	Query	Response
40.	In the bidding document, you do not mention the demand quantity of approach cable. Could you please provide the demanded quantity of approach cable?	Bidder to perform detailed survey. Approach cable specifications have been provided as attachment 2
41.	Please clarify that the demand whether it is fiber connectors (SC, FC, LC&ST) or fiber connector making toolbox?	The Optical tests detailed set specifications have been provided as attachment 3
42.	Are there designated brands and models? The referred OLP57 and OLS55 has been discontinued. OLP57 will be substituted by OLP87. OLS55 will be substituted by OLS85. Please confirm your requirement again according to this situation. Please clarify the wavelengths that OLP57 need to support.	The Optical tests detailed set specifications have been provided as attachment 3
43.	1, Please inform us the application scenario of test laptop: outdoor or business? 2, Please clarify the DVD / CD drive that is external or build-in? 3, Is the 3G SIM card slot necessary?	The Laptops detailed set specifications have been provided as attachment 3
44.	Please clarify the quantity of each tool which is required (Splicing Kit/Termination Kit/Fault Locator/Optical Test Set/Rugged Maintenance Laptops)	Please refer to price schedules
45.	The table just shows 10 Multiplexer devices, but in page 2-88, the table shows 20 equipments, please confirm it.	Revised schedule provided
46.	According to the statement, should the line rate for Multiplexer equipments be over STM-1?	Yes
47.	Please provide the network topology if it is possible.	Refer to answer question no 3
48.	We want to know the five links route that are already designed, or we will design them, and if it's that can you provide some information about these sites?	All radio links have been removed from the scope
49.	The tower is already built or we need to build it?	All towers have been removed from the scope
50.	Can you provide the frequency of this project for MW?	All radio links have been removed from the scope
51.	Is the capacity of every link 50M?	All radio links have been removed from the scope
52.	Can we provide lead-acid battery instead of Nickel-Cadmium?	No, please refer to spec 1.14.4.1
53.	Do you want us to provide two independent power systems with two independent battery systems, so the load has redundancy power? We don't have independent battery charger, the battery charging and management function are to be achieved by CSU, which can control battery and rectifier modules .Is it acceptable?	Clause 1.14.3.9.2 shall be revised and provided

No.	Query	Response
54.	During the Lot 1 site visits, KPLC provided a paper copy with corrected GPS coordinates. Can KPLC please provide this document in electronic format?	This has been provided as attachment 5
55.	The names of sites in the tender document and site visit schedule appear to be different. Can KPLC please clarify the site names with a common list or a cross reference where differences exist?	Refer to site survey list
56.	During the Lot 1 site visits, KPLC indicated that it would be possible to fit the approach cable in an HDPE pipe in the substation yard where there is no existing trenching. Can KPLC please clarity other civils requirements such as minimum depth, etc.	Refer to Attachment 1 on site surveys for guidance purpose only.
59.	During the Lot 1 site visit to Athi River, KPLC promised to give tenderers details of the SCADA capabilities for protection panels they are due to install at the substation. Can you please provide these details?	Information to be provided during the detailed design stage
60.	On page 2:52, a requirement for Lead-acid batteries is stated but in section 1.14.4.1 on page 2-105 the requirement is for Nickel- Cadmium. Furthermore, the technical schedules on page 2-119 imply that a nickel-cadmium battery is required. Can you please clarify which type of batteries you require?	The requirement is for Nickel-cadmium, the error has been corrected.
61.	In Lot 2, there is a substation named Mwatate but actually, the substation is not included in the survey schedule. Does the substation Mwatate need to install SCADA system or not?	The station has been removed from the Scope as per the revised bid document
62.	In Lot 2, There are 3 substations (Mariakani, Kikambala, Mombasa Cement) which were surveyed but they cannot be found in the tender documents. Would KPLC supply the same detail information of those 3 substations same as other substations listed in the tender.	The station have been added to the Scope as per the revised bid document
63.	In Lot 2 Mwambungo substation there is a Areva BCU which is broken and resetting again and again. The BCU should be replaced. How to handle the BCU? Will KPLC replace a new one?	Bidder to design how to get signals from the process
64.	In Lot 3 there are 7 substations (Kisumu, Kisian, Sotik, Gilgil, Turkwel, Musaga, Chepkoilel) in tender. But actually, these substations are not included in the survey schedule. Do these substations need to install SCADA system or not?	Turkwel was in the survey schedule and was visited. Kisian, Sotik, Gilgil and Chepkoilel have been removed from the scope. Kisumu and Musaga require Scada integration as per the revised bid document

No.	Query	Response
65.	There are 9 substations (Maimahiu, Narok, Matundura, Olkalou, Chepseon, Ikonge, Keroka, Migori, Homabay in Lot 3 which were surveyed but they cannot be found in the tender. Would KPLC supply the same detail information of those 3 substations same as other substations listed in the tender	Maimahiu, Matundura, Olkalou, Chepseon, Ikonge, Keroka, Migori, Homabay have been included in the scope as per the revised bid document
66.	In Lot 3, there is a substation without a name and it cannot be found in the survey schedule. The substation is very near to Webuye. Would KPLC supply the same detail information of those 3 substations same as other substations listed in the tender.	Webuye 132/33 kV is included in the bid. Webuye 33/11 kV is not included as it doesn't have a suitable station building
67.	Some protection relays are very old and they cannot be communicated. Shall they be changed to a new one or continue to be used? And when moving the device from old control room to new control room. If site test confirm that the equipment is broken, how to deal with it?	Design as per the site conditions.
68.	In some substations, the switch's open or closed signal cannot be collected. In this case, does this mean ignore this signal? Or if the signal should be collected, how to do with it? Should it be changed with a new switch?	The RTU should be designed to include the data points for future integration
69.	In order to put in a comprehensive bid, we need to know the Topography / accessibility of the fiber optic Route. We kindly request the following for all the three LOTs of Works 1. A map showing the distribution lines / substations to be covered by SCADA system 2. A map showing the extent of coverage of the existing SCADA system	The attachments provided should be sufficient to enable you provide a comprehensive bid
70.	Is it possible to get an excel copy of the BoQs	They have been provided as attachment 6
71.	Section 1.1.1.1 – Pulse Accumulators – states that meters must be provided by tenderers. Is this still a requirement and if so. • What is the specification for the energy meters? • Who is required to install and wire them? • Who will install VTs - and possibly CTs - if they are not available?	Bidders shall not supply/install energy meters.

No.	Query	Response
72.	Can you please clarify the scope of work at Nyaga substation? In particular 1. Does the scope include moving the Protection Panels to the new building? 2. Or are the protection panels going to be replaced with a new design and if so what equipment will be fitted? 3. Does the scope of work include the re-commissioning of these panels? 4. What protection will be installed on the 11kV lines?	For Nyaga, the new SCADA/Telecom equipment and 48V DC/charger shall be located in the new building, signals will be wired from the existing panels or from the switchyard. The scope does not include any Protection works.
73	Sections 1.9.2 – Data Population – states the DE400 configuration must be done in close consultation with KPLC SCADA/EMS experts. Is the contactor allowed to use the services of these experts for data/picture entry as they presumably have the supplier's authority to modify the system without consequential warranty issues? As KPLC will be aware there will be commercial difficulties in quoting for work on a supplier's proprietary system when that supplier is also bidding in the main tender.	All the data engineering works is the responsibility of the contractor.
74	During the visit to Ruaraka substation it became clear that there are very significant issues with the upgrade at Ruaraka for example. • The state of completion of the SCADA. • The requirements regarding the very old protection equipment in the external building. Can KPLC please provide complete details on this substation or remove it from the list of upgrades.	Ruaraka has been removed from the scope.
75	Is it expected that each RTU should be supplied in a standalone panel or can it be loose supplied and be installed in any existing panel?	For those stations with existing RTUs, the existing RTU panels can be used but the contractor must ensure that 25% spare capacity is maintained. However if bidder supplies standalone RTU, this shall be in one panel.
76	To receive measurements mA transducers are needed. Is it acceptable to use existing transducers, or shall transducer modules part of RTU?	where Transducers are existing they can be used, else transducers must be supplied
77	What is required for station which the value in the column "Scada Installation" is "YES" and in the column "Existing Scada in station" there is a name of Scada system? Does it mean that the substation has an existing Scada system which requires expansion?	Yes , and the bidder may choose to use the existing installation or provide their solution which meets the Specifications

No.	Query	Response
78	Does the number of signals in the "Indications", "Alarms", "Commands","Measurands" and "Energy Meters" columns indicate the total required signals, or the required additional signals?	For stations without scada means the total required, for stations with existing scada is the required additional signals
79	Which additional information the Employer expects the bidder to add to the original Single Line Diagram and Room layout drawings?	The bidder is required to visit site to verify and amend where applicable/necessary
80	The new RTUs are required to support IEC 61850 protocol for process communication. As far as we know, and according to our experience, IEC-61850 protocol is used for the substation's SAS internal communication – Please explain the role you expect the IEC 61850 protocol to fulfil in the SCADA system.	This is to cater for future expansion, the RTU shall be capable of supporting IEC 61850
81	"The cable installation shall be aerial on existing power lines. These lines are on wooden structures and on Concrete Poles and the ADSS cable shall be installed below the power line. Can you confirm that the wooden structures and Concrete Poles will bear the load of the additional fibre optic cable and automatic installation process?	In the recent years KPLC has installed more than 2000 km of ADSS on the existing network. Where a pole is found not to be in good condition during installation preparations, this shall be replaced, but experience has shown this is less than 1 %.
82	In KPLCs requirements for telecommunications, for all stations without multiplexer, its stated to provide an UPLINK switch each at the new station and remote station, and a substation switch at the new station. Is it still the case?	This requirement can be fulfilled by using a substation switch at new site and remote site. This would assist in Ethernet aggregation at the remote end

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

for **Eng. MICHAEL ADHIAMBO**
MANAGER-PROJECTS DEVELOPMENT