



Kenya Power

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Stima Plaza, Kolobot Road
Nairobi, Kenya
www.kenyapower.co.ke

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. RELATIONSHIP WITH THE PRINCIPAL BID DOCUMENT.

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

The provisions of this Addendum shall be deemed to have been incorporated in and shall be read as part of the Principal Bid Document.

A) CHANGES HAVE BEEN MADE ON THE VARIOUS ITBS OF SECTION II-BIDDING DATA SHEET (BDS) AS LISTED BELOW;

1. The scope of the Bid on ITB 1.1

ITB 1.1	<p>The name of the ICB is: SCADA UPGRADE FOR DISTRIBUTION SUBSTATIONS The identification number of the ICB is KP1/6A.1/PT/6/16/A52 The number and identification of lots (contracts) comprising this ICB is:</p> <p>KP1/6A.1/PT/6/16/A52 Lot 1- Design, Supply, Installation and Commissioning of SCADA Equipment and associated Telecommunications system to integrate Distribution Substations in Nairobi and Mt. Kenya Regions to existing SCADA system.</p> <p>KP1/6A.1/PT/6/16/A52 Lot 2- - Design, Supply, Installation and Commissioning of SCADA Equipment and associated Telecommunications system to integrate Distribution Substations in Coast Region to existing SCADA system.</p> <p>KP1/6A.1/PT/6/16/A52 Lot 3- - Design, Supply, Installation and Commissioning of SCADA Equipment and associated Telecommunications system to integrate Distribution Substations in West Kenya Region to existing SCADA system.</p> <p><i>The bidder may bid for one or more lots. Bids shall be evaluated on lot by lot basis.</i></p> <p>Details of the SCADA Equipment and associated Telecommunications Equipment being procured are summarized in the tables below:</p>
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ITB 1.1	No.of SCADA Equipment	No.of Telcom Equipment	Indication Signals	Alarms, SPI	Commands Output	Measurands, Analog Output
Lot 1						
1.Mt .kenya	11	10	221	58	129	274
2. Nairobi	7	13	177	573	108	270
FibreLength	190 km					
Lot 2						
Coast	15	11	137	328	103	131
FibreLength	80 km					
Lot 3						
West Kenya	29	28	647	1840	455	758
FibreLength	150 km					
Sub Total All Lots	70	62	1182	3323	795	1433
25%of subTotal for Future signals			296	830	198	358
Total	70	62	1478	4153	993	1791
Total Fibre	420 km					

2. Amendment on ITB 23.1 And 26.1:Submission And Opening Of Bids

The deadline for the submission and opening of bids has been extended from 5th October, 2016 to: 16th November, 2016.

ITB 23.1	<p>For bid submission purposes, the Purchaser's address is: Attention: The General Manager, Corporate Affairs & Company Secretary The Kenya Power and Lighting Company Stima Plaza, Kolobot Road, Parklands 7th Floor P.O Box 30099 - 00100 Nairobi, Kenya Telephone: +254 – (0)711031731</p> <p>The deadline for the submission of bids is: Date 09th NOVEMBER 2016 Time: 10:00Hrs East African Time</p>
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B) CHANGES HAVE BEEN MADE ON SECTION III-EVALUATION AND QUALIFICATION CRITERIA AS TO READ :

1. Evaluation

1.1.1 Technical Requirements for Facilities

1. Equipment and materials supplied shall meet the technical requirements, requirements of type test, routine test, and electrical test after installation as specified in technical specifications
2. The manufacturer of the major equipment including
 - i. RTU/Gateway
 - ii. Telecommunications Equipment
 - iii. Switches
 - iv. Fibre Plants

is required to have been awarded a valid ISO: 9001 Certificate or equivalent Quality Assurance Certification.

is required to have been awarded a valid ISO: 9001 Certificate or equivalent Quality Assurance Certification.

The manufacturers of major equipment above (RTU/Gateway, Telecommunications Equipment, Switches and Fibre Plants) must have supplied similar equipment that have been in service for at least five (5) years outside the country of manufacture

1.2 Economic Evaluation

The following factors and methods will apply:

(a) Time Schedule:

Time to complete the Plant and Installation Services from the effective date specified in Article 3 of the Contract Agreement for determining time for completion of pre-commissioning activities is: 18 months, and shall include time for design services of the contract. No credit will be given for earlier completion. Bids offering a completion date beyond the maximum designated period shall be rejected.

(b) Operating and Maintenance Costs

The price of recommended spare parts quoted in Price Schedule No. 6 shall not be considered for evaluation.

(c) Functional Guarantees of the facilities

The minimum (or maximum) requirements stated in the Specification for functional guarantees required in the Specification are:

C) CHANGES HAVE BEEN MADE ON THE VARIOUS FORMS OF SECTION IV- BIDDING FORMS AS LISTED BELOW;

1. Price Schedule Lot 1 to Lot 3

Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad

Lot 1: Schedule No.1:

Plant and Mandatory Spare Parts Supplied from Abroad						
SCADA EQUIPMENT AT SUBSTATIONS						
Item No.	Description	Code'	Unit	Qty	Unit Price (CIP to include clearing and forwarding charges to final destination)	Total Price
				1	2	(1x2)
	SCADA Equipment at Substations					
A.	Nairobi Region Substations					
1	Industrial 66/11 kV					
1.1	New RTU / Re-use existing RTU		N°.	1		
1.2	Equipment and material for adaptation works		Lot	1		
1.3	48 V-DC Power Supply		Set	1		
2	Kikuyu 66/11 kV					
2.1	New RTU / re-use existing RTU		N°.	1		
2.2	Equipment and material for adaptation works		Lot	1		
2.3	48 V-DC Power Supply		Set	1		
3	Machakos 33/11 kV					
3.1	New RTU / re-use existing RTU		N°.	1		
3.2	Equipment and material for adaptation works		Lot	1		

3.3	48 V-DC Power Supply		Set	1		
4	Nairobi West 66/11kV					
4.1	New RTU / re-use existing RTU		N°	1		
4.2	Equipment and material for adaptation works		Lot	1		
4.3	48 V-DC Power Supply		Set	1		
5	Nyaga 33/11 kV					
5.1	New Remote Terminal Unit (RTU)		N°	1		
5.2	Equipment and material for adaptation works		Lot	1		
5.3	48 V-DC Power Supply		Set	1		
6	Limuru 66/11 kV					
6.1	New RTU / re-use existing RTU		N°	1		
6.2	Equipment and material for adaptation works		Lot	1		
6.3	48 V-DC Power Supply		Set	1		
7	Athi river 220/66 kV					
7.1	New RTU / re-use existing RTU		N°	1		
7.2	Equipment and material for adaptation works		Lot	1		
7.3	48 V-DC Power Supply		Set	1		
8	Nairobi North 220/66 kV					
8.1	New RTU / re-use existing RTU		N°	1		
8.2	Equipment and material for adaptation works		Lot	1		
A	Nairobi Region Substations / Power Stations Totals					
B	Mount Kenya Region Substations / Power Stations					
8	Embu 33/11 kV					
8.1	New Remote Terminal Unit (RTU)		N°	1		
8.2	Equipment and material for adaptation works		Lot	1		
8.3	48 V-DC Power Supply		Set	1		
9	Karatina 33/11 kV					

9.1	New Remote Terminal Unit (RTU)		N°.	1		
9.2	Equipment and material for adaptation works		Lot	1		
9.3	48 V-DC Power Supply		Set	1		
10	<i>Kerugoya 33/11 kV</i>					
10.1	New Remote Terminal Unit (RTU)		N°.	1		
10.2	Equipment and material for adaptation works		Lot	1		
10.3	48 V-DC Power Supply		Set	1		
11	<i>Nanyuki 33/11 kV</i>					
11.1	New Remote Terminal Unit (RTU)		N°.	1		
11.2	Equipment and material for adaptation works		Lot	1		
11.3	48 V-DC Power Supply		Set	1		
12	<i>Kinoru 33/11 kV (Meru 33/11 kV)</i>					
12.1	New Remote Terminal Unit (RTU)		N°.	1		
12.2	Equipment and material for adaptation works		Lot	1		
12.3	48 V-DC Power Supply		Set	1		
13	<i>Kiganjo 33/11 kV</i>					
13.1	New Remote Terminal Unit (RTU)		N°.	1		
13.2	Equipment and material for adaptation works		Lot	1		
13.3	48 V-DC Power Supply		Set	1		
14	<i>Kindaruma 11/132 kV</i>					
14.1	New Remote Terminal Unit (RTU)		Lot	1		
14.2	Equipment and material for adaptation works		Lot	1		
15	<i>Kiganjo 132/33 kV Capacitor bank bays</i>					
15.1	New RTU / expand existing RTU		N°.	1		
15.2	Equipment and material for adaptation works		Lot	1		
16	<i>Nanyuki 132/33kV Capacitor bank bays</i>					
16.1	New RTU / expand existing RTU		N°.	1		
16.2	Equipment and material for adaptation works		Lot	1		
17	<i>Meru 132/33kV Capacitor bank bays</i>					
17.1	New RTU / expand existing RTU		N°.	1		
17.2	Equipment and material for adaptation works		Lot	1		

B	Mount Kenya Region Substations / Power Stations Totals					
C	Mandatory spare parts RTU's and substation works					
	remarks:					
	Tenderer shall provide a list of recommended spare parts for long-term operation					
1.1	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools		No.	1		
1.2	Interface Testing Equipment for all digital and analogue I/O-signals		No.	1		
1.3	Interface Testing Equipment for Communication (104 and 101 etc)from/to SCADA/EMS-System incl. Software		No.	1		
1.4	Equipment for adaptation works		set	1		
1.5	Configuration tool/Laptop for RTUs ,Switches		set	2		
1.6	48 V DC Supply equipment		set	1		
1.7	Ferrule Marking Machine		set	2		
C	Mandatory spare parts RTU's and substation works Totals					

Telecommunication Equipment at Substations

Item No.	Description	Code'	Unit	Qty	Unit Price (CIP to include clearing and forwarding charges to final destination)	Total Price
				-1	-2	(1x2)
A.	Nairobi Region Substations					
1	Donholm 11kV SS					
1.1	Uplink Switches for Peer to Peer Connection		No.	2		
1.2	Heavy Duty Substation Switch		No.	1		
1.3	Installation and Integration Materials		Lot	1		
2	Industrial 66/11 kV					
2.1	Supply of ADSS FO to Peer Link End		Lot	1		
2.2	Uplink Switches for Peer to Peer Connection		No.	2		

2.3	Heavy Duty Substation Switch		No.	1		
2.4	Installation and Integration Materials		Lot	1		
3	<i>Karen 66/11 kV</i>					
3.1	SDH Multiplexers		No.	1		
3.2	Installation and Integration Materials		Lot	1		
4	<i>Kikuyu 66/11 kV</i>					
4.1	SDH Multiplexers		No.	1		
4.2	Installation and Integration Materials		Lot	1		
5	<i>Limuru 66/11 kV</i>					
5.1	SDH Multiplexers		No.	1		
5.2	Installation and Integration Materials		Lot	1		
6	<i>Machakos 33/11 kV</i>					
6.1	SDH Multiplexers		No.	1		
6.2	Installation and Integration Materials		Lot	1		
7	<i>Airport 33/11 kV</i>					
7.1	Uplink Switches for Peer to Peer Connection		No.	2		
7.2	Heavy Duty Substation Switch		No.	1		
7.3	Installation and Integration Materials		Lot	1		
8	<i>Nyaga 33/11 kV</i>					
8.1	Supply of ADSS FO to Peer Link End		Lot	1		
8.2	Uplink Switches for Peer to Peer Connection		No.	2		
8.3	Heavy Duty Substation Switch		No.	1		
8.4	Installation and Integration Materials		Lot	1		
9	<i>EPZ 66/11 kV</i>					
9.1	SDH Multiplexers		No.	1		
9.2	Installation and Integration Materials		Lot	1		
10	<i>Dandora-Nairobi North 220 kV</i>					
10.1	Supply OPGW FO Via Thika Road 220		km	50		
10.2	48 cores ODF		No.	4		

11	Tana 66/11 kV					
11.1	Supply of SDH Mux		Lot	1		
11.2	Installation /Integration Materials of SDH Mux		Lot	1		
12	Athi river 220/66 kV					
12.1	Supply of SDH Mux		Lot	1		
12.2	Installation /Integration Materials of SDH Mux		Lot	1		
13	Cathedral 66/11 kV					
13.1	Supply of SDH Mux		Lot	1		
13.2	Installation /Integration Materials of SDH Mux		Lot	1		
A	Nairobi Region Substations / Power Stations Totals					
B	Mount Kenya Region Substations / Power Stations					
1	Embu East SS					
1.1	Uplink Switches for Peer to Peer Connection		No.	2		
1.2	Heavy Duty Substation Switch		No.	1		
2	Embu 33/11 kV					
2.2	Uplink Switches for Peer to Peer Connection		No.	2		
2.3	Heavy Duty Substation Switch		No.	1		
3	Karatina 33/11 kV					
3.1	Supply FO to Peer Link End		Lot	1		
3.2	Uplink Switches for Peer to Peer Connection		No.	2		
3.3	Heavy Duty Substation Switch		No.	1		
3.4	Installation & requisite Integration Materials		Lot	1		
4	Kerugoya 33/11 kV					
4.1	Supply FO to Peer Link End		Lot	1		
4.2	Uplink Switches for Peer to Peer Connection		No.	2		
4.3	Heavy Duty Substation Switch		No.	1		

4.4	Installation & requisite Integration Materials		Lot	1		
6	<i>Kinoru 33/11 kV (Meru 33/11 kV)</i>					
6.1	Uplink Switches for Peer to Peer Connection		No.	2		
6.2	Heavy Duty Substation Switch		No.	1		
6.3	Installation & requisite Integration Materials		Lot	1		
7	<i>Othaya 33/11 kV</i>					
7.1	Supply of ADSS FO to Peer Link End		Lot	1		
7.2	Uplink Switches for Peer to Peer Connection		No.	2		
7.3	Heavy Duty Substation Switch		No.	1		
7.4	Installation & requisite Integration Materials		Lot	1		
9	<i>Kiambere 220/33/11</i>					
9.1	Supply of OPGW FO to Kamburu 220/132 Link End		km	40		
9.2	Supply SDH MUX		Lot	1		
9.3	Extension Materials at Kamburu 220		Lot	1		
B	Mount Kenya Region Substations / Power Stations Totals					
C	Mandatory spare parts Telcoms and Integration works					
1	ADSS FO Cable (10%)		KMS	35		
2	OPGW /ADSS Requisite Accessories		Lot/km	35km		
3	Multiplexers		No.	1		
4	Uplink Switches		No.	3		
5	Station Switches		No.	2		
6	ODFs		No.	2		
7	FC – LC Patch Cords		No.	4		
8	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)		No.	4		
C	Mandatory spare parts Telcoms and Integration works Totals					
D	TOTAL (to Schedule No. 5. Grand Summary)					
	Name of Bidder					
	Signature of Bidder					
Notes						
¹ Bidders shall enter a code representing the country of origin of all imported plant and equipment.						
1 Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.						

Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country

Lot 1: Schedule 2:

Plant and Mandatory Spare Parts Supplied from Local					
SCADA EQUIPMENT AT SUBSTATIONS					
Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			-1	-2	(1x2)
	SCADA Equipment at Substations				
A.	Nairobi Region Substations				
1	Industrial 66/11 kV				
1.1	New RTU / Re-use existing RTU	N°.	1		
1.2	Equipment and material for adaptation works	Lot	1		
1.3	48 V-DC Power Supply	Set	1		
1.4	Installation & requisite Integration materials	Lot	1		
2	Kikuyu 66/11 kV				
2.1	New RTU / re-use existing RTU	N°.	1		
2.2	Equipment and material for adaptation works	Lot	1		
2.3	48 V-DC Power Supply	Set	1		
2.4	Installation & requisite Integration materials	Lot	1		
3	Machakos 33/11 kV				
3.1	New RTU / re-use existing RTU	N°.	1		
3.2	Equipment and material for adaptation works	Lot	1		
3.3	48 V-DC Power Supply	Set	1		
3.4	Installation & requisite Integration materials	Lot	1		
4	Nairobi West 66/11kV				
4.1	New RTU / re-use existing RTU	N°.	1		
4.2	Equipment and material for adaptation works	Lot	1		
4.3	Integration to the Scada Central system	Lot	1		
4.4	Installation & requisite Integration materials	Lot	1		

5	Nyaga 33/11 kV				
5.1	New Remote Terminal Unit (RTU)	N°.	1		
5.2	Equipment and material for adaptation works	Lot	1		
5.3	48 V-DC Power Supply	Lot			
5.4	Installation & requisite Integration materials	Lot	1		
6	Limuru 66/11 kV				
6.1	New RTU / re-use existing RTU	N°.	1		
6.2	Equipment and material for adaptation works	Lot	1		
6.3	48 V-DC Power Supply	Set	1		
6.4	Installation & requisite Integration materials	Lot	1		
7	Athi river 220/66 kV				
7.1	New RTU / re-use existing RTU	N°.	1		
7.2	Equipment and material for adaptation works	Lot	1		
7.3	48 V-DC Power Supply	Set	1		
7.4	Installation & requisite Integration materials	Lot	1		
8	Nairobi North 220/66 kV				
8.1	New RTU / re-use existing RTU	N°.	1		
8.2	Equipment and material for adaptation works	Lot	1		
A	Nairobi Region Substations / Power Stations Totals				
B	Mount Kenya Region Substations / Power Stations				
8	Embu 33/11 kV				
8.1	New Remote Terminal Unit (RTU)	N°.	1		
8.2	Equipment and material for adaptation works	Lot	1		
8.3	48 V-DC Power Supply	Set	1		
8.4	Installation & requisite Integration materials	Lot	1		
9	Karatina 33/11 kV				
9.1	New Remote Terminal Unit (RTU)	N°.	1		
9.2	Equipment and material for adaptation works	Lot	1		
9.3	48 V-DC Power Supply	Set	1		
9.4	Installation & requisite Integration materials	Lot	1		
10	Kerugoya 33/11 kV				
10.1	New Remote Terminal Unit (RTU)	N°.	1		
10.2	Equipment and material for adaptation works	Lot	1		
10.3	48 V-DC Power Supply	Set	1		

10.4	Installation & requisite Integration materials	Lot	1		
11	<i>Nanyuki 33/11 kV</i>				
11.1	New Remote Terminal Unit (RTU)	N°.	1		
11.2	Equipment and material for adaptation works	N°.	1		
11.3	48 V-DC Power Supply	Set	1		
11.4	Installation & requisite Integration materials	Lot	1		
12	<i>Kinoru 33/11 kV (Meru 33/11 kV)</i>				
12.1	New Remote Terminal Unit (RTU)	N°.	1		
12.2	Equipment and material for adaptation works	Lot	1		
12.3	48 V-DC Power Supply	Set	1		
12.4	Installation & requisite Integration materials	Lot	1		
13	<i>Kiganjo 33/11 kV</i>				
13.1	New Remote Terminal Unit (RTU)	N°.	1		
13.2	Equipment and material for adaptation works	Lot	1		
13.3	48 V-DC Power Supply	Set	1		
13.4	Installation & requisite Integration materials	Lot	1		
14	<i>Kindaruma 11/132 kV</i>				
14.1	Equipment and material for adaptation works	Lot	1		
14.2	New Remote Terminal Unit (RTU)	Lot	1		
15	<i>Kiganjo 132/33 kV Capacitor bank bays</i>				
15.1	New RTU / expand existing RTU	N°.	1		
15.2	Equipment and material for adaptation works	Lot	1		
16	<i>Nanyuki 132/33 kV Capacitor bank bays</i>				
16.1	New RTU / expand existing RTU	N°.	1		
16.2	Equipment and material for adaptation works	Lot	1		
17	<i>Meru 132/33 kV Capacitor bank bays</i>				
17.1	New RTU / expand existing RTU	N°.	1		
17.2	Equipment and material for adaptation works	Lot	1		
B	Mount Kenya Region Substations / Power Stations Totals				
C	Mandatory spare parts RTU's and substation works				
	remarks:				

1.1	Tenderer shall provide a list of recommended spare parts for long-term operation				
1.2	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools	No.	1		
1.3	Interface Testing Equipment for all digital and analogue I/O-signals	No.	1		
1.4	Interface Testing Equipment for Communication (104 and 101 etc)from/to SCADA/EMS-System incl. Software	No.	1		
1.5	Equipment for adaptation works	No.	1		
1.6	Configuration tool/Laptop for RTUs ,Switches	set	2		
1.7	48 V DC Supply equipment	set	1		
1.8	Ferrule Marking Machine	set	2		
C	Mandatory spare parts RTU's and substation works Totals				

Telecommunication Equipment at Substations

Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			-1	-2	(1x2)
A.	Nairobi Region Substations				
1	Donholm 11kV SS				
1.1	Uplink Switches for Peer to Peer Connection	No.	2		
1.2	Heavy Duty Substation Switch	No.	1		
1.3	Installation & requisite Integration works	Lot	1		
2	Industrial 66/11 kV				
2.1	Supply of ADSS FO to Peer Link End	Lot	1		
2.2	Uplink Switches for Peer to Peer Connection	No.	2		
2.3	Heavy Duty Substation Switch	No.	1		
2.4	Installation and Integration Materials	Lot	1		
3	Karen 66/11 kV				
3.1	SDH Multiplexers	No.	1		
3.2	Installation and Integration Materials	Lot	1		
4	Kikuyu 66/11 kV				
4.1	SDH Multiplexers	No.	1		
4.2	Installation and Integration Materials	Lot	1		
5	Limuru 66/11 kV				
5.1	SDH Multiplexers	No.	1		
5.2	Installation and Integration Materials	Lot	1		

6	Machakos 33/11 kV				
6.1	SDH Multiplexers	No.	1		

6.2	Installation and Integration Materials	Lot	1		
7	Airport 33/11 kV				
7.1	Uplink Switches for Peer to Peer Connection	No.	2		
7.2	Heavy Duty Substation Switch	No.	1		
7.3	Installation and Integration Materials	Lot	1		
8	Nyaga 33/11 kV				
8.1	Supply of ADSS FO to Peer Link End	Lot	1		
8.2	Uplink Switches for Peer to Peer Connection	No.	2		
8.3	Heavy Duty Substation Switch	No.	1		
8.4	Installation and Integration Materials	Lot	1		
9	EPZ 66/11 kV				
9.1	SDH Multiplexers	No.	1		
9.2	Installation and Integration Materials	Lot	1		
10	Dandora 220 kV				
10.1	Supply OPGW FO Via Thika Road 220 to Nairobi North	No.	2		
10.2	48 cores ODF	No.	4		
11	Tana 66/11 kV				
11.1	Supply of SDH Mux	Lot	1		
11.2	Installation /Integration Materials of SDH Mux	Lot	1		
12	Athi river 220/66 kV				
12.1	Supply of SDH Mux	Lot	1		
12.2	Installation /Integration Materials of SDH Mux	Lot	1		
13	Cathedral 66/11 kV				
13.1	Supply of SDH Mux	Lot	1		
13.2	Installation /Integration Materials of SDH Mux	Lot	1		

A	Nairobi Region Substations / Power Stations Totals				
B	Mount Kenya Region Substations / Power Stations				
1	<i>Embu East SS</i>				
1.1	Uplink Switches for Peer to Peer Connection	No.	2		
1.2	Heavy Duty Substation Switch	No.	1		
2	<i>Embu 33/11 kV</i>				
2.2	Uplink Switches for Peer to Peer Connection	No.	2		
2.3	Heavy Duty Substation Switch	No.	1		
3	<i>Karatina 33/11 kV</i>				
3.1	Supply FO to Peer Link End	Lot	1		
3.2	Uplink Switches for Peer to Peer Connection	No.	2		
3.3	Heavy Duty Substation Switch	No.	1		
3.4	Installation & requisite Integration Materials	Lot	1		
4	<i>Kerugoya 33/11 kV</i>				
4.1	Supply FO to Peer Link End	Lot	1		
4.2	Uplink Switches for Peer to Peer Connection	No.	2		
4.3	Heavy Duty Substation Switch	No.	1		
4.4	Installation & requisite Integration Materials	Lot	1		
5	<i>Kinoru 33/11 kV (Meru 33/11 kV)</i>				
5.1	Uplink Switches for Peer to Peer Connection	No.	2		
5.2	Heavy Duty Substation Switch	No.	1		
5.3	Installation & requisite Integration Materials	Lot	1		
6	<i>Othaya 33/11 kV</i>				
6.1	Supply of ADSS FO to Peer Link End	Lot	1		
6.2	Uplink Switches for Peer to Peer Connection	No.	2		
6.3	Heavy Duty Substation Switch	No.	1		
6.4	Installation & requisite Integration Materials	Lot	1		
7	<i>Kiambere 220/33/11</i>				
7.1	Supply of OPGW FO to Kamburu 220/132 Link End	Lot	1		
7.2	Supply SDH MUX	Lot	1		
7.3	Extension Materials at Kamburu 220	Lot	1		

B	Mount Kenya Region Substations / Power Stations Totals				
C	Mandatory spare parts Telcoms and Integration works				
1	ADSS FO Cable (10%)	KMS	35		
2	OPGW /ADSS Requisite Accessories	Lot/k m	35		
3	Multiplexers	No.	1		
4	Uplink Switches	No.	3		
5	Station Switches	No.	2		
6	ODFs	No.	2		
7	FC – LC Patch Cords	No.	4		
8	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)	No.	4		
9	Complete Radio Unit, UHF (335-345MHZ)	No.	1		
10	Complete Radio Unit, UHF (360-370MHZ)	No.	1		
C	Mandatory spare parts Telcoms and Integration works Totals				
D	Test Tools Specifications				
1	Splicing Kit	No.	1		
2	Termination Kit	No.	1		
3	Fault Locator	No.	1		
4	Optical Test Set	No.	1		
5	Rugged Test Laptops	No.	2		
D	Test Tools Specifications Totals				
E	TOTAL (to Schedule No. 5. Grand Summary)				
	Name of Bidder				
	Signature of Bidder				

Notes

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid

Schedule No. 3. Design Services

Lot 1: Schedule No.3

Design Services							
SCADA & Telecommunication							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
			1	2	3	(1x2)	(1x3)
	SCADA Equipment at Substations						
A.	Nairobi & Mt Kenya Region Substations						
100	<i>Industrial 66/11 kV</i>						
101	Substation Adaptation /Engineering Designs	Lot	1				
102	Data Engineering	Lot	1				
103	Telecommunication Design & Integration	Lot	1				
200	<i>Kikuyu 66/11 kV</i>						
201	Substation Adaptation /Engineering Designs	Lot	1				
202	Data Engineering	Lot	1				
203	Telecommunication Design & Integration	Lot	1				
300	<i>Machakos 33/11 kV</i>						
301	Substation Adaptation /Engineering Designs	Lot	1				
302	Data Engineering	Lot	1				
303	Telecommunication Design & Integration	Lot	1				
400	<i>Nairobi West 66/11kV</i>						
401	Substation Adaptation /Engineering Designs	Lot	1				
402	Data Engineering	Lot	1				
403	Telecommunication Design & Integration	Lot	1				
500	<i>Nyaga 33/11 kV</i>						
501	Substation Adaptation /Engineering Designs	Lot	1				
502	Data Engineering	Lot	1				
503	Telecommunication Design & Integration	Lot	1				

600	Limuru 66/11 kV						
601	Substation Adaptation /Engineering Designs	Lot	1				
602	Data Engineering	Lot	1				
603	Telecommunication Design & Integration	Lot	1				
700	EPZ 66/11 kV						
701	Telecommunication Design & Integration	Lot	1				
800	Embu 33/11 kV						
801	Substation Adaptation /Engineering Designs	Lot	1				
802	Data Engineering	Lot	1				
803	Telecommunication Design & Integration	Lot	1				
900	Karatina 33/11 kV						
901	Substation Adaptation /Engineering Designs	Lot	1				
902	Data Engineering	Lot	1				
903	Telecommunication Design & Integration	Lot	1				
1000	Kerugoya 33/11 kV						
1001	Substation Adaptation /Engineering Designs	Lot	1				
1002	Data Engineering	Lot	1				
1003	Telecommunication Design & Integration	Lot	1				
1100	Nanyuki 33/11 kV						
1101	Substation Adaptation /Engineering Designs	Lot	1				
1102	Data Engineering	Lot	1				
1103	Telecommunication Design & Integration	Lot	1				
1200	Kinoru 33/11 kV (Meru 33/11 kV)						
1201	Substation Adaptation /Engineering Designs	Lot	1				
1202	Data Engineering	Lot	1				
1203	Telecommunication Design & Integration	Lot	1				
1300	Kiganjo 33/11 kV						
1301	Substation Adaptation /Engineering Designs	Lot	1				
1302	Data Engineering	Lot	1				
1303	Telecommunication Design & Integration	Lot	1				

1400	Kindaruma 11/132						
1401	Substation Adaptation /Engineering Designs	Lot	1				
1402	Data Engineering	Lot	1				
1500	Donholm 11kV SS						
1501	Telecommunication Design & Integration	Lot	1				
1600	Karen 66/11 kV						
1601	Telecommunication Design & Integration	Lot	1				
1700	Airport 33/11 kV						
1701	Telecommunication Design & Integration	Lot	1				
1800	Tana 66/11 kV						
1801	Telecommunication Design & Integration	Lot	1				
1900	Embu East SS						
1901	Telecommunication Design & Integration	Lot	1				
2000	Othaya 33/11 kV						
2001	Substation Adaptation /Engineering Designs	Lot	1				
2002	Data Engineering	Lot	1				
2003	Telecommunication Design & Integration	Lot	1				
2100	Cathedral 66/11 kV						
2101	Installation and Integration of SDH Mux	Lot	1				
2200	Dandora 220 kV						
2201	Telecommunication Design & Integration	Lot	1				
2300	Nairobi North 220/66 kV						
2301	Substation Adaptation /Engineering Designs	Lot	1				
2302	Data Engineering	Lot	1				
2303	Telecommunication Design & Integration	Lot	1				
2400	Kiambere 220/33/11						
2401	Telecommunication Design & Integration	Lot	1				

2500	Athi river 220/66 kV						
2501	Substation Adaptation /Engineering Designs	Lot	1				
2502	Data Engineering	Lot	1				
2503	Telecommunication Design & Integration	Lot	1				
2600	Kiganjo 132/33 kV Capacitor bank bays						
2601	Substation Adaptation /Engineering Designs	Lot	1				
2602	Data Engineering	Lot	1				
2700	Nanyuki 132/33 kV Capacitor bank bays						
2701	Substation Adaptation /Engineering Designs	Lot	1				
2702	Data Engineering	Lot	1				
2800	Meru 132/33 kV Capacitor bank bays						
2801	Substation Adaptation /Engineering Designs	Lot	1				
2802	Data Engineering	Lot	1				
A	Nairobi & Mt Kenya Region Substations Totals						
B	TOTAL (to Schedule No. 5. Grand Summary)						
	Name of Bidder						
	Signature of Bidder						

Notes

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid.

Schedule No. 4. Installation and Other Services

Lot 1: Schedule No.4

Installation and other services							
SCADA EQUIPMENT AT SUBSTATIONS							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion
			1	2	3	(1) x (2)	(1) x (3)
	SCADA Equipment at Substations						
A.	Nairobi Region Substations						
1	Industrial 66/11 kV						
1.1	New RTU / Re-use existing RTU	N°.	1				
1.2	Equipment and material for adaptation works	Lot	1				
1.3	48 V-DC Power Supply	Lot	1				
1.4	Integration to the Scada Central system	Lot	1				
1.5	Installation & requisite integration works	Lot	1				
2	Kikuyu 66/11 kV						
2.1	New RTU / re-use existing RTU	N°.	1				
2.2	Equipment and material for adaptation works	Lot	1				
2.3	48 V-DC Power Supply	Lot	1				
2.5	Integration to the Scada Central system	Lot	1				
2.5	Installation & requisite integration works	Lot	1				
3	Machakos 33/11 kV						
3.1	New RTU / re-use existing RTU	N°.	1				
3.2	Equipment and material for adaptation works	Lot	1				
3.3	48 V-DC Power Supply	Lot	1				
3.4	Integration to the Scada Central system	Lot	1				
3.5	Installation & requisite integration works	Lot	1				

4	Nairobi West 66/11kV						
4.1	New RTU / re-use existing RTU	N°.	1				
4.2	Equipment and material for adaptation works	Lot	1				
4.3	Integration to the Scada Central system	Lot	1				
4.4	Installation & requisite Integration works	Lot	1				
5	Nyaga 33/11 kV						
5.1	New Remote Terminal Unit (RTU)	N°.	1				
5.2	Equipment and material for adaptation works	Lot	1				
5.3	48 V-DC Power Supply	Lot	1				
5.4	Integration to the Scada Central system	Lot	1				
5.5	Installation & requisite Integration works	Lot	1				
6	Limuru 66/11 kV						
6.1	New RTU / re-use existing RTU	N°.	1				
6.2	Equipment and material for adaptation works	Lot	1				
6.3	48 V-DC Power Supply	Lot	1				
6.4	Integration to the Scada Central system	Lot	1				
6.5	Installation & requisite Integration works	Lot	1				
7	Athi river 220/66 kV						
7.1	New Remote Terminal Unit (RTU)	N°.	1				
7.2	Equipment and material for adaptation works	Lot	1				
7.3	48 V-DC Power Supply	Lot	1				
7.4	Integration to the Scada Central system	Lot	1				
7.5	Installation & requisite Integration works	Lot	1				
7	Nairobi North 220/66 kV						
7.1	New RTU / re-use existing RTU	N°.	1				
7.2	Equipment and material for adaptation works	Lot	1				
7.3	48 V-DC Power Supply	Lot	1				
7.4	Integration to the Scada Central system	Lot	1				

A	Nairobi Region Substations / Power Stations Totals						
B	Mount Kenya Region Substations / Power Stations						
8	Embu 33/11 kV						
8.1	New Remote Terminal Unit (RTU)	N°.	1				
8.2	Equipment and material for adaptation works	Lot	1				
8.3	48 V-DC Power Supply	Lot	1				
8.4	Integration to the Scada Central system	Lot	1				
8.5	Installation & requisite Integration works	Lot	1				
9	Karatina 33/11 kV						
9.1	New Remote Terminal Unit (RTU)	N°.	1				
9.2	Equipment and material for adaptation works	Lot	1				
9.3	48 V-DC Power Supply	Lot	1				
9.4	Integration to the Scada Central system	Lot	1				
9.5	Installation & requisite Integration works	Lot	1				
10	Kerugoya 33/11 kV						
10.1	New Remote Terminal Unit (RTU)	N°.	1				
10.2	Equipment and material for adaptation works	Lot	1				
10.3	48 V-DC Power Supply	Lot	1				
10.4	Integration to the Scada Central system	Lot	1				
10.5	Installation & requisite Integration works	Lot	1				
11	Nanyuki 33/11 kV						
11.1	New Remote Terminal Unit (RTU)	N°.	1				
11.2	New RTU / re-use existing RTU	N°.	1				
11.3	Equipment and material for adaptation works	Lot	1				
11.4	Integration to the Scada Central system	Lot	1				
11.5	Installation & requisite Integration works	Lot	1				
12	Kinoru 33/11 kV (Meru 33/11 kV)						
12.1	New Remote Terminal Unit (RTU)	N°.	1				

12.2	Equipment and material for adaptation works	Lot	1				
12.3	48 V-DC Power Supply	Lot	1				
12.4	Integration to the Scada Central system	Lot	1				
12.5	Installation & requisite Integration works	Lot	1				
13	<i>Kiganjo 33/11 kV</i>						
13.1	New Remote Terminal Unit (RTU)	N°.	1				
13.2	Equipment and material for adaptation works	Lot	1				
13.3	48 V-DC Power Supply	Lot	1				
13.4	Integration to the Scada Central system	Lot	1				
13.5	Installation & requisite Integration works	Lot	1				
14	<i>Kindaruma 11/132 kV</i>						
14.1	New Remote Terminal Unit (RTU)	N°.	1				
14.2	Equipment and material for adaptation works	Lot	1				
14.3	Integration to the Scada Central system	Lot	1				
14.4	Installation & requisite Integration works	Lot	1				
15	<i>Kiganjo 132/33 kV Capacitor bank bays</i>						
15.1	New RTU / expand existing RTU	N°.	1				
15.2	Equipment and material for adaptation works	Lot	1				
15.3	Integration to the Scada Central system	Lot	1				
15.4	Installation & requisite Integration works	Lot	1				
16	<i>Nanyuki 132/33 kV Capacitor bank bays</i>						
16.1	New RTU / expand existing RTU	N°.	1				
16.2	Equipment and material for adaptation works	Lot	1				
16.3	Integration to the Scada Central system	Lot	1				
16.4	Installation & requisite Integration works	Lot	1				
17	<i>Meru 132/33 kV Capacitor bank bays</i>						
17.1	New RTU / expand existing RTU	N°.	1				
17.2	Equipment and material for adaptation works	Lot	1				
17.3	Integration to the Scada Central system	Lot	1				
17.4	Installation & requisite Integration works	Lot	1				

B	Mount Kenya Region Substations / Power Stations Totals						
D	Overseas Training						
	Overseas training 1						
1.1	Training courses (detailed specification to be provided by Tenderer) for 2 KPLC Engineers excluding air travel and accomodation (each lot)	Lot	1				
	Overseas training 2						
1.2	Training courses IEC 61850 as per bidspecifications for 2 KPLC Engineers excluding air travel and accomodation (each Lot)	Lot	1				
D	Overseas training Totals						
E	Participation of KPLC personnel in Factory Tests						
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation)	Lot	1				
E	Participation of KPLC personnel in Factory Tests Totals						

Telecommunication Equipment at Substations

Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Foreign Currency Portion	Local Currency Portion	Foreign	Local
			1	2	3	(1) x (2)	(1) x (3)
	Telecommunication Equipment at Substations						
A.	Nairobi Region Substations						
1	<i>Donholm 11kV SS</i>						
1.1	Uplink Switches for Peer to Peer Connection	No.	2				
1.2	Heavy Duty Substation Switch	No.	1				
1.3	Installation & requisite Integration works	Lot	1				

2	Industrial 66/11 kV						
2.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
2.2	Uplink Switches for Peer to Peer Connection	No.	2				
2.3	Heavy Duty Substation Switch	No.	1				
2.4	Installation & requisite Integration works	Lot	1				
3	Karen 66/11 kV						
3.1	SDH Multiplexers	No.	1				
3.2	Installation & requisite Integration works	Lot	1				
4	Kikuyu 66/11 kV						
4.1	SDH Multiplexers	No.	1				
4.2	Installation & Integration works	Lot	1				
5	Limuru 66/11 kV						
5.1	SDH Multiplexers	No.	1				
5.2	Installation & requisite Integration works	Lot	1				
6	Machakos 33/11 kV						
6.1	SDH Multiplexers	No.	1				
6.2	Installation & requisite Integration works	Lot	1				
7	Airport 33/11 kV						
7.1	Uplink Switches for Peer to Peer Connection	No.	2				
7.2	Heavy Duty Substation Switch	No.	1				
7.3	Installation & requisite Integration works	Lot	1				
8	Nyaga 33/11 kV						
8.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
8.2	Uplink Switches for Peer to Peer Connection	No.	2				
8.3	Heavy Duty Substation Switch	No.	1				
8.4	Installation & requisite Integration works	Lot	1				
9	Dandora 220 kV						
9.1	Installation & testing of OPGW FO to Nairobi North Via Thika Road 220	No.	2				
10	Cathedral 66/11 kV						
10.1	Installation and Integration of SDH Mux	Lot	1				
11	EPZ 66/11 kV						
11.1	Uplink Switches for Peer to Peer Connection	No.	2				

11.2	Heavy Duty Substation Switch	No.	1				
11.3	Installation & requisite Integration works	Lot	1				
12	Tana 66/11 kV						
12.1	Supply of SDH Mux	Lot	1				
12.2	Installation /Integration Materials of SDH Mux	Lot	1				
13	Athi river 220/66 kV						
13.1	Supply of SDH Mux	Lot	1				
13.2	Installation /Integration Materials of SDH Mux	Lot	1				
A	Nairobi Region Substations / Power Stations Totals						
B	Mount Kenya Region Substations / Power Stations						
1	Embu East SS						
1.1	Uplink Switches for Peer to Peer Connection	No.	2				
1.2	Heavy Duty Substation Switch	No.	1				
1.3	Installation & requisite Integration works	Lot	1				
2	Embu 33/11 kV						
2.1	Uplink Switches for Peer to Peer Connection	No.	2				
2.2	Heavy Duty Substation Switch	No.	1				
2.3	Installation & requisite Integration works	Lot	1				
3	Karatina 33/11 kV						
3.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
3.2	Uplink Switches for Peer to Peer Connection	No.	2				
3.3	Heavy Duty Substation Switch	No.	1				
3.4	Installation & requisite Integration works	Lot	1				
4	Kerugoya 33/11 kV						
4.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
4.2	Uplink Switches for Peer to Peer Connection	No.	2				
4.3	Heavy Duty Substation Switch	No.	1				
4.4	Installation & requisite Integration works	Lot	1				

5	Kinoru 33/11 kV (Meru 33/11 kV)						
5.1	Uplink Switches for Peer to Peer Connection	No.	2				
5.2	Heavy Duty Substation Switch	No.	1				
5.3	Installation & requisite Integration works	Lot	1				
6	Othaya 33/11 kV						
6.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
6.2	Uplink Switches for Peer to Peer Connection	No.	2				
6.3	Heavy Duty Substation Switch	No.	1				
6.4	Installation & requisite Integration works	Lot	1				
7	Kiambere 220/33/11						
7.1	Installation & testing of OPGW FO to Kamburu 220/132 Link End	Lot	1				
7.2	SDH MUX Installation and Integrations	Lot	1				
7.3	Extension Materials at Kamburu 220	Lot	1				
B	Mount Kenya Region Substations / Power Stations Totals						
C	Test Tools Specifications						
1	Splicing Kit	No.	1				
2	Termination Kit	No.	1				
3	Fault Locator	No.	1				
4	Optical Test Set	No.	1				
5	Rugged Test Laptops	No.	1				
C	Test Tools Specifications						
D	Training - FO Terminal equipment						
1.1	1 week Training course (detailed specification to be provided by Tenderer & training material) for 4 KPLC personnel excluding air travel & accomodation	Lot	1				

D	Training Totals						
E	Participation of KPLC personnel in Factory Acceptance Tests - FO Terminal Equipment						
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation) for FO terminal Equipment	Lot	1				
1.2	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation) for ADSS FO tests	Lot	1				
E	Participation of KPLC personnel in Factory Tests Totals						
F	TOTAL (to Schedule No. 5. Grand Summary)						
	Name of Bidder						
	Signature of Bidder						
Notes							
¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid							

Schedule No. 5. Grand Summary

Schedule 5: Lot 1

Item	Description	Total Price ¹	
		Foreign	Local
	Total Schedule No. 1. Plant, and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule No. 2. Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule No. 3. Design Services		
	Total Schedule No. 4. Installation and Other Services		
	TOTAL (to Bid Form)		

Name of Bidder _____

Signature of Bidder _____

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid. Create and use as many columns for Foreign Currency requirement as there are foreign currencies

Schedules of Rates and Prices Lot 2

Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad

Lot 2: Schedule No.1

Plant and Mandatory Spare Parts Supplied from Abroad						
SCADA EQUIPMENT AT SUBSTATIONS						
Item No.	Description	Code ¹	Unit	Qty	Unit Price (DDP to site inclusive of all Taxes, duties, levies) & Inclusive of VAT	Total Price
				1	2	(1x2)
	SCADA Equipment at Substations					
A	Coastal Region Substations / Power Stations					
1	<i>Msambweni 33/11 kV</i>					
1.1	New Remote Terminal Unit (RTU)		N°	1		
1.2	Equipment and material for adaptation works		Lot	1		
1.3	48 V-DC Power Supply		Set	1		
1.4	Integration to the Scada Central system		Lot	1		
1.5	Installation & requisite Integration works		Lot	1		
2	<i>Mwabungo 33/11 kV</i>					
2.1	New Remote Terminal Unit (RTU)		N°	1		
2.2	Equipment and material for adaptation works		Lot	1		
2.3	48 V-DC Power Supply		Set	1		
2.4	Integration to the Scada Central system		Lot	1		
2.5	Installation & requisite Integration works		Lot	1		
3	<i>Kanamai 33/11 kV</i>					
3.1	New Remote Terminal Unit (RTU)		N°	1		
3.2	Equipment and material for adaptation works		Lot	1		
3.3	48 V-DC Power Supply		Set	1		
3.4	Integration to the Scada Central system		Lot	1		

3.5	Installation & requisite Integration works		Lot	1		
4	Watamu 33/11 kV					
4.1	New Remote Terminal Unit (RTU)		N°	1		
4.2	Equipment and material for adaptation works		Lot	1		
4.3	48 V-DC Power Supply		Set	1		
4.4	Integration to the Scada Central system		Lot	1		
4.5	Installation & requisite Integration works		Lot	1		
5	Mariakani 33/11 kV					
5.1	New Remote Terminal Unit (RTU)		N°	1		
5.2	Equipment and material for adaptation works		Lot	1		
5.3	48 V-DC Power Supply		Set	1		
5.4	Integration to the Scada Central system		Lot	1		
5.5	Installation & requisite Integration works		Lot	1		
6	Utange 33/11 kV					
6.1	New Remote Terminal Unit (RTU)		N°	1		
6.2	Equipment and material for adaptation works		Lot	1		
6.3	48 V-DC Power Supply		Set	1		
6.4	Integration to the Scada Central system		Lot	1		
6.5	Installation & requisite Integration works		Lot	1		
7	Kilifi 33/11 kV					
7.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
7.2	Equipment and material for adaptation works		Lot	1		
7.3	48 V-DC Power Supply		Set	1		
7.4	Integration to the Scada Central system		Lot	1		
7.5	Installation & requisite Integration works		Lot	1		
8	Kikambala 33/11 kV					
8.1	New Remote Terminal Unit (RTU)		N°	1		
8.2	Equipment and material for adaptation works		Lot	1		
8.3	48 V-DC Power Supply		Set	1		
8.4	Integration to the Scada Central system		Lot	1		
7.5	Installation & requisite Integration works		Lot	1		

9	Voi 132/33 kV					
9.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
9.2	Equipment and material for adaptation works		Lot	1		
9.3	48 V-DC Power Supply		Set	1		
9.4	Integration to the Scada Central system		Lot	1		
7.5	Installation & requisite Integration works		Lot	1		
10	Mombasa Cement 33/11 kV					
10.1	New Remote Terminal Unit (RTU)		N°	1		
10.2	Equipment and material for adaptation works		Lot	1		
10.3	48 V-DC Power Supply		Set	1		
10.4	Integration to the Scada Central system		Lot	1		
10.5	Installation & requisite Integration works		Lot	1		
11	Rabai Reactor bays					
11.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
11.2	Equipment and material for adaptation works		Lot	1		
11.3	Integration to the Scada Central system		Lot	1		
11.4	Installation & requisite Integration works		Lot	1		
12	Mtito Andei Reactor bays					
12.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
12.2	Equipment and material for adaptation works		Lot	1		
12.3	Integration to the Scada Central system		Lot	1		
12.4	Installation & requisite Integration works		Lot	1		
13	Kiboko Reactor bays					
13.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
13.2	Equipment and material for adaptation works		Lot	1		
13.3	Integration to the Scada Central system		Lot	1		
13.4	Installation & requisite Integration works		Lot	1		
14	New Bamburi Reactor bays					
14.1	Existing/New Remote Terminal Unit (RTU)		N°	1		
14.2	Equipment and material for adaptation works		Lot	1		

14.3	Integration to the Scada Central system		Lot	1		
14.4	Installation & requisite Integration works		Lot	1		
15	Malindi 33/11 kV					
15.1	Existing/New Remote Terminal Unit (RTU)		N°.	1		
15.2	Equipment and material for adaptation works		Lot	1		
15.3	48 V-DC Power Supply		Set	1		
15.4	Integration to the Scada Central system		Lot	1		
15.5	Installation & requisite Integration works		Lot	1		
A	Coastal Region Substations / Power Stations Totals					
B	Mandatory spare parts RTU's and substation works					
	remarks:					
	Tenderer shall provide a list of recommended spare parts for long-term operation					
1.1	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools		No.	1		
1.2	Interface Testing Equipment for all digital and analogue I/O-signals		No.	1		
	Interface Testing Equipment for Communication from/to SCADA/EMS-System incl. Software		No.	1		
1.3	Equipment for adaptation works		set	1		
1.4	48 V DC Supply equipment		set	1		
1.5	Ferrule Marking Machine		set	2		
Telecommunication Equipment at Substations						
Item No.	Description	Code ¹	Unit	Qty	Unit Price (DDP to site inclusive of all Taxes, duties, levies) & Inclusive of VAT	Total Price
				-1	-2	(1x2)

A	Coastal Region Substations / Power Stations					
1	<i>Msambweni 33/11 kV</i>					
1.1	Installation & testing of ADSS FO to Peer Link End		Lot	1		
1.2	Uplink Switches for Peer to Peer Connection		No.	2		
1.3	Heavy Duty Substation Switch		No.	1		
1.4	Installation & requisite Integration works		Lot	1		
2	<i>Mwabungo 33/11 kV</i>					
2.1	Installation & testing of ADSS FO to Peer Link End		Lot	1		
2.2	Uplink Switches for Peer to Peer Connection		No.	2		
2.3	Heavy Duty Substation Switch		No.	1		
2.4	Installation & requisite Integration works		Lot	1		
3	<i>New Bamburi 132kV SS</i>					
3.1	SDH Multiplexers		No.	1		
3.2	Installation & requisite Integration works		Lot	1		
4	<i>Kanamai 33/11 kV</i>					
4.1	Uplink Switches for Peer to Peer Connection		No.	2		
4.2	Heavy Duty Substation Switch		No.	1		
4.3	Installation & requisite Integration works		Lot	1		
5	<i>Watamu 33/11 kV</i>					
5.1	Installation & testing of ADSS FO to Peer Link End		Lot	1		
5.2	Uplink Switches for Peer to Peer Connection		No.	2		
5.3	Heavy Duty Substation Switch		No.	1		
5.4	Installation & requisite Integration works		Lot	1		
6	<i>Mariakani 33/11 kV</i>					
6.1	Installation & testing of ADSS FO to Peer Link End		Lot	1		
6.2	Uplink Switches for Peer to Peer Connection		No.	2		
6.3	Heavy Duty Substation Switch		No.	1		
6.4	Installation & requisite Integration works		Lot	1		
7	<i>Malindi 33/11 kV</i>					

7.1	Installation & requisite Integration works		Lot	1		
8	Utange 33/11 kV					
8.1	Uplink Switches for Peer to Peer Connection		No.	2		
8.2	Heavy Duty Substation Switch		No.	1		
8.3	Installation & requisite Integration works		Lot	1		
9	Shanzu 33/11 kV					
9.1	Uplink Switches for Peer to Peer Connection		No.	2		
9.2	Heavy Duty Substation Switch		No.	1		
9.3	Installation & requisite Integration works		Lot	1		
10	Kikambala 33/11 kV					
10.1	Uplink Switches for Peer to Peer Connection		No.	2		
10.2	Heavy Duty Substation Switch		No.	1		
10.3	Installation & requisite Integration works		Lot	1		
11	Mombasa Cement 33/11 kV					
11.1	Installation & testing of ADSS FO to Peer Link End		Lot	1		
11.2	Uplink Switches for Peer to Peer Connection		No.	2		
11.3	Heavy Duty Substation Switch		No.	1		
11.4	Installation & requisite Integration works		Lot	1		
A	Coastal Region Substations / Power Stations Totals					
B	Mandatory spare parts Telcoms and Integration works					
1	ADSS FO Cable (10%)		KMS	16		
2	Multiplexers		No.	1		
3	Uplink Switches		No.	2		
4	Station Switches		No.	1		
5	ODFs		No.	2		
6	FC – LC Patch Cords		No.	4		
7	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)		No.	4		
B	Mandatory spare parts Telcoms and Integration works					
C	Test Tools Specifications					
1	Splicing Kit		No.	1		
2	Termination Kit		No.	1		

3	Fault Locator		No.	1		
4	Optical Test Set		No.	1		
5	Rugged Test Laptops		No.	1		
C	Test Tools Specifications					
D	TOTAL (to Schedule No. 5. Grand Summary)					
	Name of Bidder					
	Signature of Bidder					

Notes

¹ Bidders shall enter a code representing the country of origin of all imported plant and equipment.

² Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.

Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country

Lot 2: Schedule 2: Plant and Mandatory Spare Parts Supplied from Local					
SCADA EQUIPMENT AT SUBSTATIONS					
Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			1	2	(1x2)
	SCADA Equipment at Substations				
A	Coastal Region Substations / Power Stations				
1	<i>Msambweni 33/11 kV</i>				
1.1	New Remote Terminal Unit (RTU)	N°.	1		
1.2	Equipment and material for adaptation works	Lot	1		
1.3	48 V-DC Power Supply	Set	1		
2	<i>Mwabungo 33/11 kV</i>				
2.1	New Remote Terminal Unit (RTU)	N°.	1		
2.2	Equipment and material for adaptation works	Lot	1		
2.3	48 V-DC Power Supply	Set	1		
3	<i>Kanamai 33/11 kV</i>				
3.1	New Remote Terminal Unit (RTU)	N°.	1		
3.2	Equipment and material for adaptation works	Lot	1		
3.3	48 V-DC Power Supply	Set	1		
4	<i>Watamu 33/11 kV</i>				
4.1	New Remote Terminal Unit (RTU)	N°.	1		
4.2	Equipment and material for adaptation works	Lot	1		
4.3	48 V-DC Power Supply	Set	1		
5	<i>Mariakani 33/11 kV</i>				
5.1	New Remote Terminal Unit (RTU)	N°.	1		
5.2	Equipment and material for adaptation works	Lot	1		
5.3	48 V-DC Power Supply	Set	1		

6	Utange 33/11 kV				
6.1	New Remote Terminal Unit (RTU)	N°.	1		
6.2	Equipment and material for adaptation works	Lot	1		
6.3	48 V-DC Power Supply	Set	1		
7	Kikambala 33/11 kV				
7.1	New Remote Terminal Unit (RTU)	N°.	1		
7.2	Equipment and material for adaptation works	Lot	1		
7.3	48 V-DC Power Supply	Set	1		
8	Kilifi 33/11 kV				
8.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
8.2	Equipment and material for adaptation works	Lot	1		
8.3	48 V-DC Power Supply	Set	1		
9	Voi 132/33 kV				
9.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
9.2	Equipment and material for adaptation works	Lot	1		
9.3	48 V-DC Power Supply	Set	1		
10	Mombasa Cement 132/33 kV				
10.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
10.2	Equipment and material for adaptation works	Lot	1		
10.3	48 V-DC Power Supply	Set	1		
11	Rabai Reactor bays				
11.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
11.2	Equipment and material for adaptation works	Lot	1		
12	Mtito Andei Reactor bays				
12.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
12.2	Equipment and material for adaptation works	Lot	1		
13	Kiboko Reactor bays				
13.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
13.2	Equipment and material for adaptation works	Lot	1		

14	New Bamburi Reactor bays				
14.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
14.2	Equipment and material for adaptation works	Lot	1		
15	Malindi 33/11 kV				
15.1	Existing/New Remote Terminal Unit (RTU)	N°.	1		
15.2	Equipment and material for adaptation works	Lot	1		
15.3	48 V-DC Power Supply	Set	1		
A	Coastal Region Substations / Power Stations Totals				
B	Mandatory spare parts RTU's and substation works				
	remarks:				
	Tenderer shall provide a list of recommended spare parts for long-term operation				
1.1	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools	No.	1		
1.2	Interface Testing Equipment for all digital and analogue I/O-signals	No.	1		
1.3	Interface Testing Equipment for Communication from/to SCADA/EMS-System incl. Software	No.	1		
1.4	Equipment for adaptation works	set	1		
1.5	48 V DC Supply equipment	set	1		
1.6	Ferrule Marking Machine	set	2		
B	Mandatory spare parts RTU's and substation works Totals				
Telecommunication Equipment at Substations					
Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			-1	-2	(1x2)

A	Coastal Region Substations / Power Stations				
1	<i>Msambweni 33/11 kV</i>				
1.1	Supply of ADSS FO to Peer Link End	Lot	1		
1.2	Uplink Switches for Peer to Peer Connection	No.	2		
1.3	Heavy Duty Substation Switch	No.	1		
2	<i>Mwabungo 33/11 kV</i>				
2.1	Supply of ADSS FO to Peer Link End	Lot	1		
2.2	Uplink Switches for Peer to Peer Connection	No.	2		
2.3	Heavy Duty Substation Switch	No.	1		
3	<i>New Bamburi 132kV SS</i>				
3.1	SDH Multiplexers	No.	1		
4	<i>Kanamai 33/11 kV</i>				
4.1	Uplink Switches for Peer to Peer Connection	No.	2		
4.2	Heavy Duty Substation Switch	No.	1		
5	<i>Watamu 33/11 kV</i>				
5.1	Supply of ADSS FO to Peer Link End	Lot	1		
5.2	Uplink Switches for Peer to Peer Connection	No.	2		
5.3	Heavy Duty Substation Switch	No.	1		
6	<i>Mariakani 33/11 kV</i>				
6.1	Supply of ADSS FO to Peer Link End	Lot	1		
6.2	Uplink Switches for Peer to Peer Connection	No.	2		
6.3	Heavy Duty Substation Switch	No.	1		
7	<i>Utange 33/11 kV</i>				
7.1	Uplink Switches for Peer to Peer Connection	No.	2		
7.2	Heavy Duty Substation Switch	No.	1		
7.3	Installation & requisite Integration Materials	Lot	1		
8	<i>Shanzu 33/11 kV</i>				
8.1	Uplink Switches for Peer to Peer Connection	No.	2		

8.2	Heavy Duty Substation Switch	No.	1		
8.3	Installation & requisite Integration Materials	Lot	1		
9	<i>Kilifi 33/11 kV</i>				
9.1	Uplink Switches for Peer to Peer Connection	No.	2		
9.2	Heavy Duty Substation Switch	No.	1		
9.3	Installation & requisite Integration Materials	Lot	1		
A	Coastal Region Substations / Power Stations Totals				
B	Mandatory spare parts Telcoms and Integration works				
1	ADSS FO Cable (10%)	KMS	16		
2	Multiplexers	No.	2		
3	Uplink Switches	No.	2		
4	Station Switches	No.	1		
5	ODFs	No.	2		
6	FC – LC Patch Cords	No.	4		
7	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)	No.	4		
B	Mandatory spare parts Telcoms and Integration works Totals				
C	Test Tools Specifications				
1	Splicing Kit	No.	1		
2	Termination Kit	No.	1		
3	Fault Locator	No.	1		
4	Optical Test Set	No.	1		
5	Rugged Test Laptops	No.	1		
C	Test Tools Specifications Totals				
D	TOTAL (to Schedule No. 5. Grand Summary)				
	Name of Bidder				
	Signature of Bidder				

Notes

Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid

Schedule No. 3. Design Services

Lot 2: Schedule 3: Design Services							
SCADA & Telecommunicaton Design							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
			-1	-2	-3	(1x2)	(1x3)
	SCADA & Telcom Equipment Designs						
A	Coastal Region Substations / Power Stations						
100	<i>Msambweni 33/11 kV</i>						
101	Substation Adaptation /Engineering Designs	Lot	1				
102	Data Engineering	Lot	1				
103	Telecommunication Design & Integration	Lot	1				
200	<i>Mwabungo 33/11 kV</i>						
201	Substation Adaptation /Engineering Designs	Lot	1				
202	Data Engineering	Lot	1				
203	Telecommunication Design & Integration	Lot	1				
300	<i>Kanamai 33/11 kV</i>						
301	Substation Adaptation /Engineering Designs	Lot	1				
302	Data Engineering	Lot	1				
303	Telecommunication Design & Integration	Lot	1				
400	<i>Watamu 33/11 kV</i>						
401	Substation Adaptation /Engineering Designs	Lot	1				
402	Data Engineering	Lot	1				

403	Telecommunication Design & Integration	Lot	1				
500	Mariakani 33/11 kV						
501	Substation Adaptation /Engineering Designs	Lot	1				
502	Data Engineering	Lot	1				
503	Telecommunication Design & Integration	Lot	1				
600	Utange 33/11 kV						
601	Substation Adaptation /Engineering Designs	Lot	1				
602	Data Engineering	Lot	1				
603	Telecommunication Design & Integration	Lot	1				
700	Kilifii 33/11 kV						
701	Substation Adaptation /Engineering Designs	Lot	1				
702	Data Engineering	Lot	1				
703	Telecommunication Design & Integration	Lot	1				
800	Kikambala 33/11 kV						
801	Substation Adaptation /Engineering Designs	Lot	1				
802	Data Engineering	Lot	1				
803	Telecommunication Design & Integration	Lot	1				
900	New Bamburi 132kV SS						
901	Substation Adaptation /Engineering Designs	Lot	1				
902	Data Engineering	Lot	1				
903	Telecommunication Design & Integration	Lot	1				
1000	Malindi 33/11 kV						
1001	Telecommunication Design & Integration	No.	2				
1002	Substation Adaptation /Engineering Designs	Lot	1				
1003	Data Engineering	Lot	1				
1100	Shanzu 33/11 kV						
1101	Telecommunication Design & Integration	Lot	1				
1200	Voi 132/33 kV						
1201	Substation Adaptation /Engineering Designs	Lot	1				

1202	Data Engineering	Lot	1				
1203	Telecommunication Design & Integration	Lot	1				
1300	Mombasa cement kV						
1301	Substation Adaptation /Engineering Designs	Lot	1				
1302	Data Engineering	Lot	1				
13.3	Telecommunication Design & Integration	Lot	1				
1400	Rabai 220/132/33 kV reactors						
1401	Substation Adaptation /Engineering Designs	Lot	1				
1402	Data Engineering	Lot	1				
1500	Mtito 132/33 kV reactors						
1501	Substation Adaptation /Engineering Designs	Lot	1				
1502	Data Engineering	Lot	1				
1600	Kiboko 132/33 kV reactors						
1601	Substation Adaptation /Engineering Designs	Lot	1				
1602	Data Engineering	Lot	1				
A	Coastal Region Substations / Power Stations Totals						
B	TOTAL (to Schedule No. 5. Grand Summary)						
	Name of Bidder						
	Signature of Bidder						

Notes

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid.

Schedule No. 4. Installations and Other Services

Lot 2 : Installations and Other Services							
SCADA EQUIPMENT AT SUBSTATIONS							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion
			1	2	3	(1) x (2)	(1) x (3)
	SCADA Equipment at Substations						
A	Coastal Region Substations / Power Stations						
1	Msambweni 33/11 kV						
1.1	Integration to the Scada Central system	Lot	1				
1.2	Installation & requisite Integration works	Lot	1				
2	Mwabungo 33/11 kV						
2.1	Integration to the Scada Central system	Lot	1				
2.2	Installation & requisite Integration works	Lot	1				
3	Kanamai 33/11 kV						
3.1	Integration to the Scada Central system	Lot	1				
3.2	Installation & requisite Integration works	Lot	1				
4	Watamu 33/11 kV						
4.1	Integration to the Scada Central system	Lot	1				
4.2	Installation & requisite Integration works	Lot	1				
5	Mariakani 33/11 kV						
5.1	Integration to the Scada Central system	Lot	1				
5.2	Installation & requisite Integration works	Lot	1				
6	Utange 33/11 kV						
5.1	Integration to the Scada Central system	Lot	1				
5.2	Installation & requisite Integration works	Lot	1				

7	Kilifi 33/11 kV						
7.1	Integration to the Scada Central system	Lot	1				
7.2	Installation & requisite Integration works	Lot	1				
8	Kikambala 33/11 kV						
8.1	Integration to the Scada Central system	N°.	1				
8.2	Installation & requisite Integration works	Lot	1				
9	Voi 132/ 33 kV						
9.1	Integration to the Scada Central system	N°.	1				
9.2	Installation & requisite Integration works	Lot	1				
10	Mombasa cement						
10.1	Integration to the Scada Central system	N°.	1				
10.2	Installation & requisite Integration works	Lot	1				
11	New Bamburi reactors						
11.1	Integration to the Scada Central system	N°.	1				
11.2	Installation & requisite Integration works	Lot	1				
12	Rabai 220/132/33 kV reactors						
12.1	Integration to the Scada Central system	N°.	1				
12.2	Installation & requisite Integration works	Lot	1				
13	Mtito 132/33 kV reactors						
13.1	Integration to the Scada Central system	N°.	1				
13.2	Installation & requisite Integration works	Lot	1				
14	Kiboko 132/33 kV reactors						
14.1	Integration to the Scada Central system	N°.	1				
14.2	Installation & requisite Integration works	Lot	1				
A	Coastal Region Substations / Power Stations Totals						
C	Overseas Training						

	Overseas training 1						
1.1	Training courses (detailed specification to be provided by Tenderer) for 2 KPLC Engineers excluding air travel and accomodation (each lot)	Lot					
	Overseas training 2						
1.2	Training courses IEC 61850 as per bidspecifications for 2 KPLC Engineers excluding air travel and accomodation (each Lot)	Lot					
C	Overseas training Totals						
D	Participation of KPLC personnel in Factory Tests						
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation)	Lot					
D	Participation of KPLC personnel in Factory Tests Totals						

Telecommunication Equipment at Substations

Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion
			-1	-2	-3	(1) x (2)	(1) x (3)
A	Coastal Region Substations / Power Stations						
1	Msambweni 33/11 kV						
1.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
1.2	Installation & requisite Integration works	Lot	1				
2	Mwabungo 33/11 kV						
2.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
2.2	Installation & requisite Integration works	Lot	1				

3	<i>New Bamburi 132kV SS</i>						
3.1	Installation & requisite Integration works	Lot	1				
4	<i>Kanamai 33/11 kV</i>						
4.1	Installation & requisite Integration works	Lot	1				
5	<i>Watamu 33/11 kV</i>						
5.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
5.2	Installation & requisite Integration works	Lot	1				
6	<i>Mariakani 33/11 kV</i>						
6.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
6.2	Installation & requisite Integration works	Lot	1				
7	<i>Malindi 33/11 kV</i>						
7.1	Installation & requisite Integration works	Lot	1				
8	<i>Utange 33/11 kV</i>						
8.1	Installation & requisite Integration works	Lot	1				
9	<i>Shanzu 33/11 kV</i>						
9.1	Installation & requisite Integration works	Lot	1				
10	<i>Kikambala 33/11 kV</i>						
10.1	Installation & requisite Integration works	Lot	1				
11	<i>Voi 132/33</i>						
11.1	Installation & requisite Integration works	Lot	1				
12	<i>Mombasa cement</i>						
12.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
12.2	Installation & requisite Integration works	Lot	1				
A	Coastal Region Substations / Power Stations Totals						

B	Overseas Training						
	Overseas training 1						
1.1	Training courses (detailed specification to be provided by Tenderer) for 2 KPLC Engineers excluding air travel and accomodation (each lot)	Lot					
	Overseas training 2						
1.2	Training courses IEC 61850 as per bid specifications for 2 KPLC Engineers excluding air travel and accomodation (each Lot)	Lot					
B	Overseas training Totals						
C	Participation of KPLC personnel in Factory Tests						
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation)	Lot					
C	Participation of KPLC personnel in Factory Tests Totals						
D	TOTAL (to Schedule No. 5. Grand Summary)						
	Name of Bidder						
	Signature of Bidder						

Notes

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid

Schedule No. 5. Grand Summary

Schedule 5:Lot 2

Item	Description	Total Price ¹	
		Foreign	Local
	Total Schedule No. 1. Plant, and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule No. 2. Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule No. 3. Design Services		
	Total Schedule No. 4. Installation and Other Services		
TOTAL (to Bid Form)			

Name of Bidder _____

Signature of Bidder _____

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid. Create and use as many columns for Foreign Currency requirement as there are foreign currencies

Schedules of Rates and Prices Lot 3

Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad

Lot 3: Schedule 1

Plant and Mandatory Spare Parts Supplied from Abroad						
SCADA EQUIPMENT AT SUBSTATIONS						
Item No.	Description	Code ¹	Unit	Qty	Unit Price (CIP to include clearing and forwarding charges to final destination)	Total Price
				-1	-2	(1x2)
	SCADA Equipment at Substations					
A	Western Region Substations / Power Stations					
1	<i>Kisumu East 33/11 kV</i>					
1.1	New Remote Terminal Unit (RTU)		N°.	1		
1.2	Equipment and material for adaptation works		Lot	1		
1.3	48 V-DC Power Supply		Set	1		
2	<i>Kakamega 33/11 kV</i>					
2.1	New Remote Terminal Unit (RTU)		N°.	1		
2.2	Equipment and material for adaptation works		Lot	1		
2.3	48 V-DC Power Supply		Set	1		
3	<i>Kericho. 33/11 kV</i>					
3.1	New Remote Terminal Unit (RTU)		N°.	1		
3.2	Equipment and material for adaptation works		Lot	1		
3.3	48 V-DC Power Supply		Set	1		
4	<i>Ikonge 33/11 kV</i>					
4.1	New Remote Terminal Unit (RTU)		N°.	1		
4.2	Equipment and material for adaptation works		Lot	1		

4.3	48 V-DC Power Supply		Set	1		
5	Kisii 33/11 kV					
5.1	New Remote Terminal Unit (RTU)		N°.	1		
5.2	Equipment and material for adaptation works		Lot	1		
5.3	48 V-DC Power Supply		Set	1		
6	Mogogosiek 33/11 kV					
6.1	New Remote Terminal Unit (RTU)		N°.	1		
6.2	Equipment and material for adaptation works		Lot	1		
6.3	48 V-DC Power Supply		Set	1		
7	Obote Rd 33/11 kV					
7.1	New Remote Terminal Unit (RTU)		N°.	1		
7.2	Equipment and material for adaptation works		Lot	1		
7.3	48 V-DC Power Supply		Set	1		
8	Oikalau 33/11 kV					
8.1	New Remote Terminal Unit (RTU)		N°.	1		
8.2	Equipment and material for adaptation works		Lot	1		
8.3	48 V-DC Power Supply		Set	1		
9	Cheptulu 33/11 kV					
9.1	New Remote Terminal Unit (RTU)		N°.	1		
9.2	Equipment and material for adaptation works		Lot	1		
9.3	48 V-DC Power Supply		Set	1		
10	Elburgon 33/11 kV					
10.1	New Remote Terminal Unit (RTU)		N°.	1		
10.2	Equipment and material for adaptation works		Lot	1		
10.3	48 V-DC Power Supply		Set	1		
11	Matundura 33/11 kV					
11.1	New Remote Terminal Unit (RTU)		N°.	1		
11.2	Equipment and material for adaptation works		Lot	1		
11.3	48 V-DC Power Supply		Set	1		
12	Marula 33/11 kV					

12.1	New Remote Terminal Unit (RTU)		N°.	1		
12.2	Equipment and material for adaptation works		Lot	1		
12.3	48 V-DC Power Supply		Set	1		
13	<i>Kihoto 33/11 kV</i>					
13.1	New Remote Terminal Unit (RTU)		N°.	1		
13.2	Equipment and material for adaptation works		Lot	1		
13.3	48 V-DC Power Supply		Set	1		
14	<i>Soilo 132/11 kV</i>					
14.1	Existing/ New Remote Terminal Unit (RTU)		N°.	1		
14.2	Equipment and material for adaptation works		Lot	1		
15	<i>Nakuru Depot 33/11 kV</i>					
15.1	New Remote Terminal Unit (RTU)		N°.	1		
15.2	Equipment and material for adaptation works		Lot	1		
15.3	48 V-DC Power Supply		Set	1		
16	<i>Njoro 33/11 kV</i>					
16.1	New Remote Terminal Unit (RTU)		N°.	1		
16.2	Equipment and material for adaptation works		Lot	1		
16.3	48 V-DC Power Supply		Set	1		
17	<i>Nyahururu 33/11 kV</i>					
17.1	New Remote Terminal Unit (RTU)		N°.	1		
17.2	Equipment and material for adaptation works		Lot	1		
17.3	48 V-DC Power Supply		Set	1		
18	<i>Rongai 33/11 kV</i>					
18.1	New Remote Terminal Unit (RTU)		N°.	1		
18.2	Equipment and material for adaptation works		Lot	1		
18.3	48 V-DC Power Supply		Set	1		
19	<i>Mwariki 33/11 kV</i>					
19.1	New Remote Terminal Unit (RTU)		N°.	1		
19.2	Equipment and material for adaptation works		Lot	1		
19.3	48 V-DC Power Supply		Set	1		

20	Eldoret Depot 33/11 kV				
20.1	New Remote Terminal Unit (RTU)		N°.	1	
20.2	Equipment and material for adaptation works		Lot	1	
20.3	48 V-DC Power Supply		Set	1	
21	Eldoret Industrial 33/11 kV				
21.2	New Remote Terminal Unit (RTU)		N°.	1	
21.3	Equipment and material for adaptation works		Lot	1	
21.4	48 V-DC Power Supply		Set	1	
22	Kitale 33/11 kV				
22.1	New Remote Terminal Unit (RTU)		N°.	1	
22.2	Equipment and material for adaptation works		Lot	1	
22.3	48 V-DC Power Supply		Set	1	
23	Kapsabet 33/11 kV				
23.1	New Remote Terminal Unit (RTU)		N°.	1	
23.2	Equipment and material for adaptation works		Lot	1	
23.3	48 V-DC Power Supply		Set	1	
24	Turkwel 11/220kV				
24.1	extension / re-use existing RTU		N°.	1	
24.2	Equipment and material for adaptation works		Lot	1	
25	Homa bay 33/11 kV				
25.1	New Remote Terminal Unit (RTU)		N°.	1	
25.2	Equipment and material for adaptation works		N°.	1	
25.3	48 V-DC Power Supply		Lot	1	
26	Muhoroni 33/11kV				
26.1	New Remote Terminal Unit (RTU)		N°.	1	
26.2	Equipment and material for adaptation works		Lot	1	
26.3	48 V-DC Power Supply		Lot	1	
27	Orpower 11/220 kV				
27.1	extension / re-use existing RTU		N°.	1	
27.2	Equipment and material for adaptation works		Lot	1	

28	Keroka 33/11 kV				
28.1	New Remote Terminal Unit (RTU)		N°.	1	
28.2	Equipment and material for adaptation works		Lot	1	
28.3	48 V-DC Power Supply		Set	1	
29	Migori 33/11 kV				
29.1	New Remote Terminal Unit (RTU)		N°.	1	
29.2	Equipment and material for adaptation works		Lot	1	
29.3	48 V-DC Power Supply		Set	1	
30	Webuye 132/33 kV				
30.1	New Remote Terminal Unit (RTU)		N°.	1	
30.2	Equipment and material for adaptation works		Lot	1	
30.3	48 V-DC Power Supply		Set	1	
31	Chemosit 132/33 kV Capacitor bank bays				
31.1	extension / re-use existing RTU		N°.	1	
31.2	Equipment and material for adaptation works		Lot	1	
32	Kisumu 132/33 kV capacitor bank bays				
32.1	extension / re-use existing RTU		N°.	1	
32.2	Equipment and material for adaptation works		Lot	1	
33	Kegati 132/33 kV Capacitor bank bays				
33.1	extension / re-use existing RTU		N°.	1	
33.2	Equipment and material for adaptation works		Lot	1	
34	Eldoret 132/33 kV Capacitor bank bays				
34.1	extension / re-use existing RTU		N°.	1	
34.2	Equipment and material for adaptation works		Lot	1	
35	Lanet 132/33 kV Capacitor bank bays				
35.1	extension / re-use existing RTU		N°.	1	
35.2	Equipment and material for adaptation works		N°.	1	
36	Musaga 132/33 kV Capacitor bank bays				
36.1	extension / re-use existing RTU		N°.	1	
36.2	Equipment and material for adaptation works		Lot	1	

37	Mai mahiu 33/11 kV				
37.1	New Remote Terminal Unit (RTU)		N°.	1	
37.2	Equipment and material for adaptation works		Lot	1	
37.3	48 V-DC Power Supply		Set	1	
A	Western Region Substations / Power Stations Totals				
B	Mandatory spare parts RTU's and substation works				
	remarks:				
	Tenderer shall provide a list of recommended spare parts for long-term operation				
1.1	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools		No.	1	
1.2	Interface Testing Equipment for all digital and analogue I/O-signals		No.	1	
1.3	Interface Testing Equipment for Communication from/to SCADA/EMS-System incl. Software		No.	1	
1.4	Equipment for adaptation works		set	1	
1.5	48 V DC Supply equipment		set	1	
1.6	Ferrule Marking Machine		set	2	
B	Mandatory spare parts RTU's and substation works Totals				

Telecommunication Equipment at Substations

Item No.	Description	Code ¹	Unit	Qty	Unit Price (CIP to include clearing and forwarding charges to final destination)	Total Price
				-1	-2	(1x2)
	Telecommunication Equipment at Substations					
A	Western Region Substations / Power Stations					
1	Kakamega 33/11 kV					
1.1	SDH Multiplexers		No.	2		
1.2	Installation & requisite Integration Materials		Lot	1		
2	Kericho 33/11 kV					

2.1	SDH Multiplexers		No.	2		
2.2	Installation & requisite Integration Materials		Lot	1		
3	<i>Ikonge 33/11 kV</i>					
3.1	Supply of ADSS FO to Peer Link End		Lot	1		
3.2	Uplink Switches for Peer to Peer Connection		No.	2		
3.3	Heavy Duty Substation Switch		No.	1		
3.4	Installation & requisite Integration Materials		Lot	1		
4	<i>Kisii 33/11 kV</i>					
4.1	SDH Multiplexers		No.	1		
4.2	Installation & requisite Integration Materials		Lot	1		
5	<i>Kisumu East</i>					
5.1	Uplink Switches for Peer to Peer Connection		No.	2		
5.2	Heavy Duty Substation Switch		No.	1		
5.3	Installation & requisite Integration Materials		Lot	1		
6	<i>Mogogosiek 33/11 kV</i>					
6.1	Uplink Switches for Peer to Peer Connection		No.	2		
6.2	Heavy Duty Substation Switch		No.	1		
6.3	Installation & Integration materials		Lot	1		
7	<i>Obote Rd 33/11 kV</i>					
7.1	Uplink Switches for Peer to Peer Connection		No.	2		
7.2	Heavy Duty Substation Switch		No.	1		
7.3	Installation & Integration materials		Lot	1		
8	<i>Oikalau 33/11 kV</i>					
8.1	Uplink Switches for Peer to Peer Connection		No.	2		
8.2	Heavy Duty Substation Switch		No.	1		
8.3	Installation & Integration materials		Lot	1		
9	<i>Cheptulu 33/11 kV</i>					
9.1	Supply of ADSS FO to Peer Link End		Lot	1		
9.2	Uplink Switches for Peer to Peer Connection		No.	2		
9.3	Heavy Duty Substation Switch		No.	1		
9.4	Installation & Integration materials		Lot	1		
10	<i>Elburgon 33/11 kV</i>					
10.1	Uplink Switches for Peer to Peer Connection		No.	2		
10.2	Heavy Duty Substation Switch		No.	1		
10.3	Installation & Integration materials		Lot	1		
11	<i>Matundura 33/11 kV</i>					
11.1	Supply of ADSS FO to Peer Link End		Lot	1		
11.2	Uplink Switches for Peer to Peer Connection		No.	2		
11.3	Heavy Duty Substation Switch		No.	1		

11.4	Installation & Integration materials		Lot	1		
12	<i>Marula 33/11 kV</i>					
12.1	Supply of ADSS FO to Peer Link End		Lot	1		
12.2	Uplink Switches for Peer to Peer Connection		No.	2		
12.3	Heavy Duty Substation Switch		Lot	1		
12.4	Installation & Integration materials		Lot	1		
13	<i>Kihoto 33/11 kV</i>					
13.1	Supply of ADSS FO to Peer Link End		Lot	1		
13.2	Uplink Switches for Peer to Peer Connection		No.	2		
13.3	Heavy Duty Substation Switch		Lot	1		
13.4	Installation & Integration materials		Lot	1		
14	<i>Soilo 132/11 kV</i>					
14.1	Installation & Integration materials		Lot	1		
15	<i>Njoro 33/11 kV</i>					
15.1	Uplink Switches for Peer to Peer Connection		No.	2		
15.2	Heavy Duty Substation Switch		No.	1		
15.3	Installation & Integration materials		Lot	1		
15.4	Supply of ADSS FO to Peer Link End		Lot	1		
16	<i>Nyahururu 33/11 kV</i>					
16.1	Uplink Switches for Peer to Peer Connection		No.	2		
16.2	Heavy Duty Substation Switch		No.	1		
16.3	Installation & Integration materials		Lot	1		
17	<i>Rongai 33/11 kV</i>					
17.1	Uplink Switches for Peer to Peer Connection		No.	2		
17.2	Heavy Duty Substation Switch		No.	1		
17.3	Installation & Integration materials		Lot	1		
18	<i>Mwariki 33/11 kV</i>					
18.1	Supply of ADSS FO to Peer Link End		Lot	1		
18.2	Uplink Switches for Peer to Peer Connection		No.	2		
18.3	Heavy Duty Substation Switch		No.	1		
18.4	Installation & Integration materials		Lot	1		
19	<i>Eldoret Depot 33/11 kV</i>					
19.1	SDH Multiplexers		No.	2		
19.2	Installation & Integration materials		Lot	1		
20	<i>Eldoret Industrial 33/11 kV</i>					
20.1	Uplink Switches for Peer to Peer Connection		No.	2		
20.2	Heavy Duty Substation Switch		No.	1		
20.3	Installation & Integration materials		Lot	1		

21	<i>Kitale 33/11 kV</i>				
21.1	Uplink Switches for Peer to Peer Connection		No.	2	
21.2	Heavy Duty Substation Switch		No.	1	
21.3	Installation & Integration materials		Lot	1	
22	<i>Kapsabet 33/11 kV</i>				
22.1	Uplink Switches for Peer to Peer Connection		No.	2	
22.2	Heavy Duty Substation Switch		No.	1	
22.3	Installation & Integration materials		Lot	1	
23	<i>Turkwel 220kV</i>				
23.1	ETL 600 PLC, Installation & comissioning materials both ends		Lot	1	
24	<i>Orpower 11/220</i>				
24.1	Uplink Switches for Peer to Peer Connection		No.	2	
24.2	Heavy Duty Substation Switch		No.	1	
24.3	Installation & Integration materials		Lot	1	
25	<i>Chepseon 33/11 kV</i>				
25.1	Supply of ADSS FO to Peer Link End		Lot	1	
25.2	Installation & Integration materials		Lot	1	
26	<i>Kainuk/Sarmarch</i>				
26.1	Supply of Approach cable FO to Peer Link End		Lot	1	
26.2	Installation & Integration materials		Lot	1	
27	<i>Mai Mahiu 33/11 kV</i>				
27.1	Uplink Switches for Peer to Peer Connection		No.	2	
27.2	Heavy Duty Substation Switch		No.	1	
27.3	Installation & Integration materials		Lot	1	
27.4	Supply of ADSS FO to Peer Link End		Lot	1	
A	Western Region Substations / Power Stations Totals				
B	Mandatory spare parts RTU's and substation works				
1	ADSS FO Cable (5%)		KMS		
2	Multiplexers		No.	1	
3	Uplink Switches		No.	2	
4	Station Switches		No.	1	
5	ODFs		No.	2	
6	FC – LC Patch Cords		No.	4	
7	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)		No.	4	
8	Enhanced outdoor Cat5e Cable		m	300	

B	Mandatory spare parts RTU's and substation works Totals					
C	TOTAL (to Schedule No. 5. Grand Summary)					
	Name of Bidder					
	Signature of Bidder					
Notes						
¹ Bidders shall enter a code representing the country of origin of all imported plant and equipment.						
² Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.						

Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country

Lot 3: Schedule 2

Plant and Mandatory Spare Parts Supplied from Local					
SCADA EQUIPMENT AT SUBSTATIONS					
Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			1	2	(1x2)
	SCADA Equipment at Substations				
A	Western Region Substations / Power Stations				
1	<i>Kisumu East 33/11 kV</i>				
1.1	New Remote Terminal Unit (RTU)	N°.	1		
1.2	Equipment and material for adaptation works	Lot	1		
1.3	48 V-DC Power Supply	Set	1		
2	<i>Kakamega 33/11 kV</i>				
2.1	New Remote Terminal Unit (RTU)	N°.	1		
2.2	Equipment and material for adaptation works	Lot	1		
2.3	48 V-DC Power Supply	Set	1		
3	<i>Kericho. 33/11 kV</i>				
3.1	New Remote Terminal Unit (RTU)	N°.	1		
3.2	Equipment and material for adaptation works	Lot	1		
3.3	48 V-DC Power Supply	Set	1		
4	<i>Ikonge 33/11 kV</i>				
4.1	New Remote Terminal Unit (RTU)	N°.	1		
4.2	Equipment and material for adaptation works	Lot	1		
4.3	48 V-DC Power Supply	Set	1		
5	<i>Kisii 33/11 kV</i>				

5.1	New Remote Terminal Unit (RTU)	N°.	1		
5.2	Equipment and material for adaptation works	Lot	1		
5.3	48 V-DC Power Supply	Set	1		
6	Mogogosiek 33/11 kV				
6.1	New Remote Terminal Unit (RTU)	N°.	1		
6.2	Equipment and material for adaptation works	Lot	1		
6.3	48 V-DC Power Supply	Set	1		
7	Obote Rd 33/11 kV				
7.1	New Remote Terminal Unit (RTU)	N°.	1		
7.2	Equipment and material for adaptation works	Lot	1		
7.3	48 V-DC Power Supply	Set	1		
8	Oikalau 33/11 kV				
8.1	New Remote Terminal Unit (RTU)	N°.	1		
8.2	Equipment and material for adaptation works	Lot	1		
8.3	48 V-DC Power Supply	Set	1		
9	Cheptulu 33/11 kV				
9.1	New Remote Terminal Unit (RTU)	N°.	1		
9.2	Equipment and material for adaptation works	Lot	1		
9.3	48 V-DC Power Supply	Set	1		
10	Elburgon 33/11 kV				
10.1	New Remote Terminal Unit (RTU)	N°.	1		
10.2	Equipment and material for adaptation works	Lot	1		
10.3	48 V-DC Power Supply	Set	1		
11	Matundura 33/11 kV				
11.1	New Remote Terminal Unit (RTU)	N°.	1		
11.2	Equipment and material for adaptation works	Lot	1		
11.3	48 V-DC Power Supply	Set	1		
12	Marula 33/11 kV				
12.1	New Remote Terminal Unit (RTU)	N°.	1		
12.2	Equipment and material for adaptation works	Lot	1		
12.3	48 V-DC Power Supply	Set	1		

13	Kihoto 33/11 kV				
13.1	New Remote Terminal Unit (RTU)	N°.	1		
13.2	Equipment and material for adaptation works	Lot	1		
13.3	48 V-DC Power Supply	Set	1		
14	Soilo 132/11 kV				
14.1	Existing/ New Remote Terminal Unit (RTU)	N°.	1		
14.2	Equipment and material for adaptation works	Lot	1		
15	Nakuru Depot 33/11 kV				
15.1	New Remote Terminal Unit (RTU)	N°.	1		
15.2	Equipment and material for adaptation works	Lot	1		
15.3	48 V-DC Power Supply	Set	1		
16	Njoro 33/11 kV				
16.1	New Remote Terminal Unit (RTU)	N°.	1		
16.2	Equipment and material for adaptation works	Lot	1		
16.3	48 V-DC Power Supply	Set	1		
17	Nyahururu 33/11 kV				
17.1	New Remote Terminal Unit (RTU)	N°.	1		
17.2	Equipment and material for adaptation works	Lot	1		
17.3	48 V-DC Power Supply	Set	1		
18	Rongai 33/11 kV				
18.1	New Remote Terminal Unit (RTU)	N°.	1		
18.2	Equipment and material for adaptation works	Lot	1		
18.3	48 V-DC Power Supply	Set	1		
19	Mwariki 33/11 kV				
19.1	New Remote Terminal Unit (RTU)	N°.	1		
19.2	Equipment and material for adaptation works	Lot	1		
19.3	48 V-DC Power Supply	Set	1		
20	Eldoret Depot 33/11 kV				
20.1	New Remote Terminal Unit (RTU)	N°.	1		
20.2	Equipment and material for adaptation works	Lot	1		

20.3	48 V-DC Power Supply	Set	1		
21	Eldoret Industrial 33/11 kV				
21.2	New Remote Terminal Unit (RTU)	N°.	1		
21.3	Equipment and material for adaptation works	Lot	1		
21.4	48 V-DC Power Supply	Set	1		
22	Kitale 33/11 kV				
22.1	New Remote Terminal Unit (RTU)	N°.	1		
22.2	Equipment and material for adaptation works	Lot	1		
22.3	48 V-DC Power Supply	Set	1		
23	Kapsabet 33/11 kV				
23.1	New Remote Terminal Unit (RTU)	N°.	1		
23.2	Equipment and material for adaptation works	Lot	1		
23.3	48 V-DC Power Supply	Set	1		
24	Turkwel 11/220kV				
24.1	extension / re-use existing RTU	N°.	1		
24.2	Equipment and material for adaptation works	Lot	1		
25	Homa bay 33/11 kV				
25.1	New Remote Terminal Unit (RTU)	N°.	1		
25.2	Equipment and material for adaptation works	N°.	1		
25.3	48 V-DC Power Supply	Lot	1		
26	Muhoroni 33/11kV				
26.1	New Remote Terminal Unit (RTU)	N°.	1		
26.2	Equipment and material for adaptation works	Lot	1		
26.3	48 V-DC Power Supply	Lot	1		
27	Orpower 11/220 Kv				
27.1	extension / re-use existing RTU	N°.	1		
27.2	Equipment and material for adaptation works	Lot	1		
28	Keroka 33/11 kV				
28.1	New Remote Terminal Unit (RTU)	N°.	1		
28.2	Equipment and material for adaptation works	Lot	1		

28.3	48 V-DC Power Supply	Set	1		
29	Migori 33/11 kV				
29.1	New Remote Terminal Unit (RTU)	N°.	1		
29.2	Equipment and material for adaptation works	Lot	1		
29.3	48 V-DC Power Supply	Set	1		
30	Webuye 132/33 kV				
30.1	New Remote Terminal Unit (RTU)	N°.	1		
30.2	Equipment and material for adaptation works	Lot	1		
30.3	48 V-DC Power Supply	Set	1		
31	Chemosit 132/33 kV Capacitor bank bays				
31.1	extension / re-use existing RTU	N°.	1		
31.2	Equipment and material for adaptation works	Lot	1		
32	Kisumu 132/33 kV capacitor bank bays				
32.1	extension / re-use existing RTU	N°.	1		
32.2	Equipment and material for adaptation works	Lot	1		
33	Kegati 132/33 kV Capacitor bank bays				
33.1	extension / re-use existing RTU	N°.	1		
33.2	Equipment and material for adaptation works	Lot	1		
34	Eldoret 132/33 kV Capacitor bank bays				
34.1	extension / re-use existing RTU	N°.	1		
34.2	Equipment and material for adaptation works	Lot	1		
35	Lanet 132/33 kV Capacitor bank bays				
35.1	extension / re-use existing RTU	N°.	1		
35.2	Equipment and material for adaptation works	N°.	1		
36	Musaga 132/33 kV Capacitor bank bays				
36.1	extension / re-use existing RTU	N°.	1		
36.2	Equipment and material for adaptation works	Lot	1		
37	Mai Mahiu 132/33 kV				
37.1	New Remote Terminal Unit (RTU)	N°.	1		

37.2	Equipment and material for adaptation works	Lot	1		
37.3	48 V-DC Power Supply	Set	1		
A	Western Region Substations / Power Stations Totals				
B	Mandatory spare parts RTU's and substation works				
	remarks:				
	Tenderer shall provide a list of recommended spare parts for long-term operation				
1.1	Portable Test Set for RTU according Chapt. 1.3.5 incl. Note book, Software and tools	No.	1		
1.2	Interface Testing Equipment for all digital and analogue I/O-signals	No.	1		
1.3	Interface Testing Equipment for Communication from/to SCADA/EMS-System incl. Software	No.	1		
1.4	Equipment for adaptation works	set	1		
1.5	48 V DC Supply equipment	set	1		
1.6	Ferrule Marking Machine	set	2		
B	Mandatory spare parts RTU's and substation works Totals				

Telecommunication Equipment at Substations

Item No.	Description	Unit	Qty	Unit Price (EXW)	Total Price
			-1	-2	(1x2)
	Telecommunication Equipment at Substations				
A	Western Region Substations / Power Stations				
1	Kakamega 33/11 kV				
1.1	SDH Multiplexers	No.	2		
1.2	Installation & requisite Integration Materials	Lot	1		
2	Kericho 33/11 kV				
2.1	SDH Multiplexers	No.	2		
2.2	Installation & requisite Integration Materials	Lot	1		
3	Ikonge 33/11 kV				
3.1	Supply of ADSS FO to Peer Link End	Lot	1		
3.2	Uplink Switches for Peer to Peer Connection	No.	2		
3.3	Heavy Duty Substation Switch	No.	1		
3.4	Installation & requisite Integration Materials	Lot	1		

4	<i>Kisii 33/11 kV</i>				
4.1	SDH Multiplexers	No.	1		
4.2	Installation & requisite Integration Materials	Lot	1		
5	<i>Kisumu East</i>				
5.1	Uplink Switches for Peer to Peer Connection	No.	2		
5.2	Heavy Duty Substation Switch	No.	1		
5.3	Installation & requisite Integration Materials	Lot	1		
6	<i>Mogogosiek 33/11 kV</i>				
6.1	Uplink Switches for Peer to Peer Connection	No.	2		
6.2	Heavy Duty Substation Switch	No.	1		
6.3	Installation & Integration materials	Lot	1		
7	<i>Obote Rd 33/11 kV</i>				
7.1	Uplink Switches for Peer to Peer Connection	No.	2		
7.2	Heavy Duty Substation Switch	No.	1		
7.3	Installation & Integration materials	Lot	1		
8	<i>Olkalau 33/11 kV</i>				
8.1	Uplink Switches for Peer to Peer Connection	No.	2		
8.2	Heavy Duty Substation Switch	No.	1		
8.3	Installation & Integration materials	Lot	1		
9	<i>Cheptulu 33/11 kV</i>				
9.1	Supply of ADSS FO to Peer Link End	Lot	1		
9.2	Uplink Switches for Peer to Peer Connection	No.	2		
9.3	Heavy Duty Substation Switch	No.	1		
9.4	Installation & Integration materials	Lot	1		
10	<i>Elburgon 33/11 kV</i>				
10.1	Uplink Switches for Peer to Peer Connection	No.	2		
10.2	Heavy Duty Substation Switch	No.	1		
10.3	Installation & Integration materials	Lot	1		
11	<i>Matundura 33/11 kV</i>				
11.1	Supply of ADSS FO to Peer Link End	Lot	1		
11.2	Uplink Switches for Peer to Peer Connection	No.	2		
11.3	Heavy Duty Substation Switch	No.	1		
11.4	Installation & Integration materials	Lot	1		
12	<i>Marula 33/11 kV</i>				
12.1	Supply of ADSS FO to Peer Link End	Lot	1		
12.2	Uplink Switches for Peer to Peer Connection	No.	2		
12.3	Heavy Duty Substation Switch	Lot	1		
12.4	Installation & Integration materials	Lot	1		

13	<i>Kihoto 33/11 kV</i>				
13.1	Supply of ADSS FO to Peer Link End	Lot	1		
13.2	Uplink Switches for Peer to Peer Connection	No.	2		
13.3	Heavy Duty Substation Switch	Lot	1		
13.4	Installation & Integration materials	Lot	1		
14	<i>Soilo 132/11 kV</i>				
14.1	Installation & Integration materials	Lot	1		
15	<i>Njoro 33/11 kV</i>				
15.1	Uplink Switches for Peer to Peer Connection	No.	2		
15.2	Heavy Duty Substation Switch	No.	1		
15.3	Installation & Integration materials	Lot	1		
15.4	Supply of ADSS FO to Peer Link End	Lot	1		
16	<i>Nyahururu 33/11 kV</i>				
16.1	Uplink Switches for Peer to Peer Connection	No.	2		
16.2	Heavy Duty Substation Switch	No.	1		
16.3	Installation & Integration materials	Lot	1		
17	<i>Rongai 33/11 kV</i>				
17.1	Uplink Switches for Peer to Peer Connection	No.	2		
17.2	Heavy Duty Substation Switch	No.	1		
17.3	Installation & Integration materials	Lot	1		
18	<i>Mwariki 33/11 kV</i>				
18.1	Supply of ADSS FO to Peer Link End	Lot	1		
18.2	Uplink Switches for Peer to Peer Connection	No.	2		
18.3	Heavy Duty Substation Switch	No.	1		
18.4	Installation & Integration materials	Lot	1		
19	<i>Eldoret Depot 33/11 kV</i>				
19.1	SDH Multiplexers	No.	2		
19.2	Installation & Integration materials	Lot	1		
20	<i>Eldoret Industrial 33/11 kV</i>				
20.1	Uplink Switches for Peer to Peer Connection	No.	2		
20.2	Heavy Duty Substation Switch	No.	1		
20.3	Installation & Integration materials	Lot	1		
21	<i>Kitale 33/11 kV</i>				
21.1	Uplink Switches for Peer to Peer Connection	No.	2		
21.2	Heavy Duty Substation Switch	No.	1		
21.3	Installation & Integration materials	Lot	1		
22	<i>Kapsabet 33/11 kV</i>				
22.1	Uplink Switches for Peer to Peer Connection	No.	2		
22.2	Heavy Duty Substation Switch	No.	1		

22.3	Installation & Integration materials	Lot	1		
23	Turkweil 220kV				
23.1	ETL 600 PLC, Installation & comissioning materials both ends	Lot	1		
24	Orpower 11/220				
24.1	Uplink Switches for Peer to Peer Connection	No.	2		
24.2	Heavy Duty Substation Switch	No.	1		
24.3	Installation & Integration materials	Lot	1		
25	Chepseon 33/11 kV				
25.1	Supply of ADSS FO to Peer Link End	Lot	1		
25.2	Installation & Integration materials	Lot	1		
26	Kainuk/Sarmarch				
26.1	Supply of ADSS FO to Peer Link End				
26.2	Installation & Integration materials	Lot	1		
27	Mai Mahiu 33/11 kV				
27.1	Uplink Switches for Peer to Peer Connection	No.	2		
27.2	Heavy Duty Substation Switch	No.	1		
27.3	Installation & Integration materials	Lot	1		
27.4	Supply of ADSS FO to Peer Link End	Lot	1		
A	Western Region Substations / Power Stations Totals				
B	Mandatory spare parts RTU's and substation works				
1	ADSS FO Cable (10%)	KMS	13		
2	Multiplexers	No.	1		
3	Uplink Switches	No.	2		
4	Station Switches	No.	1		
5	ODFs	No.	2		
6	FC – LC Patch Cords	No.	4		
7	SFP Modules (2x20, 2x40, 2x60 & 2x80 KMS)	No.	4		
8	Enhanced outdoor Cat5e Cable	m	300		
B	Mandatory spare parts RTU's and substation works Totals				
C	TOTAL (to Schedule No. 5. Grand Summary)				
	Name of Bidder				
	Signature of Bidder				
Notes					

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid.

Schedule No. 3. Design Services

Lot 3: Schedule 3

Design Services							
SCADA & Telcom Designs							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
			1	2	3	(1x2)	(1x3)
	SCADA & Telcom Designs at Substations						
A	Western Region Substations / Power Stations						
100	<i>Kisumu East 33/11 kV</i>						
101	Substation Adaptation /Engineering Designs	Lot	1				
102	Data Engineering	Lot	1				
103	Telecommunication Design & Integration	Lot	1				
200	<i>Kakamega 33/11 kV</i>						
201	Substation Adaptation /Engineering Designs	Lot	1				
202	Data Engineering	Lot	1				
203	Telecommunication Design & Integration	Lot	1				
300	<i>Kericho. 33/11 kV</i>						
301	Substation Adaptation /Engineering Designs	Lot	1				
302	Data Engineering	Lot	1				
303	Telecommunication Design & Integration	Lot	1				
400	<i>Ikonge 33/11 kV</i>						
401	Substation Adaptation /Engineering Designs	N°.	1				
402	Data Engineering	Lot	1				
403	Telecommunication Design & Integration	Lot	1				
500	<i>Kisii 33/11 kV</i>						
501	Substation Adaptation /Engineering Designs	Lot	1				

502	Data Engineering	Lot	1				
503	Telecommunication Design & Integration	Lot	1				
600	Mogogosiek 33/11 kV						
601	Substation Adaptation /Engineering Designs	Lot	1				
602	Data Engineering	Lot	1				
603	Telecommunication Design & Integration	Lot	1				
700	Obote Rd 33/11 kV						
701	Substation Adaptation /Engineering Designs	Lot	1				
702	Data Engineering	Lot	1				
703	Telecommunication Design & Integration	Lot	1				
800	Oikalau 33/11 kV						
801	Substation Adaptation /Engineering Designs	Lot	1				
802	Data Engineering	Lot	1				
803	Telecommunication Design & Integration	Lot	1				
900	Cheptulu 33/11 kV						
901	Substation Adaptation /Engineering Designs	Lot	1				
902	Data Engineering	Lot	1				
903	Telecommunication Design & Integration	Lot	1				
1000	Elburgon 33/11 kV						
1001	Substation Adaptation /Engineering Designs	Lot	1				
1002	Data Engineering	Lot	1				
1003	Telecommunication Design & Integration	Lot	1				
1100	Matundura 33/11 kV						
1101	Substation Adaptation /Engineering Designs	Lot	1				
1102	Data Engineering	Lot	1				
1103	Telecommunication Design & Integration	Lot	1				
1200	Marula 33/11 kV						
1201	Substation Adaptation /Engineering Designs	Lot	1				
1202	Data Engineering	Lot	1				
1203	Telecommunication Design & Integration	Lot	1				

1300	Kihoto 33/11 kV						
1301	Substation Adaptation /Engineering Designs	Lot	1				
1302	Data Engineering	Lot	1				
1303	Telecommunication Design & Integration	Lot	1				
1400	Soilo 132/11 kV						
1401	Substation Adaptation /Engineering Designs	Lot	1				
1402	Data Engineering	Lot	1				
1500	Nakuru Depot 33/11 kV						
1501	Substation Adaptation /Engineering Designs	Lot	1				
1502	Data Engineering	Lot	1				
1503	Telecommunication Design & Integration	Lot	1				
1600	Njoro 33/11 kV						
1601	Substation Adaptation /Engineering Designs	Lot	1				
1602	Data Engineering	Lot	1				
1603	Telecommunication Design & Integration	Lot	1				
1700	Nyahururu 33/11 kV						
1701	Substation Adaptation /Engineering Designs	Lot	1				
1702	Data Engineering	Lot	1				
1703	Telecommunication Design & Integration	Lot	1				
1800	Rongai 33/11 kV						
1801	Substation Adaptation /Engineering Designs	Lot	1				
1802	Data Engineering	Lot	1				
1803	Telecommunication Design & Integration	Lot	1				
1900	Mwariki 33/11 kV						
1901	Substation Adaptation /Engineering Designs	Lot	1				
1902	Data Engineering	Lot	1				
1903	Telecommunication Design & Integration	Lot	1				
2000	Eldoret Depot 33/11 kV						
2001	Substation Adaptation /Engineering Designs	Lot	1				

2002	Data Engineering	Lot	1				
2003	Telecommunication Design & Integration	Lot	1				
2100	Eldoret Industrial 33/11 kV						
2101	Substation Adaptation /Engineering Designs	Lot	1				
2102	Data Engineering	Lot	1				
2103	Telecommunication Design & Integration	Lot	1				
2200	Kitale 33/11 kV						
2201	Substation Adaptation /Engineering Designs	Lot	1				
2202	Data Engineering	Lot	1				
2203	Telecommunication Design & Integration	Lot	1				
2300	Kapsabet 33/11 kV						
2301	Substation Adaptation /Engineering Designs	Lot	1				
2302	Data Engineering	Lot	1				
2303	Telecommunication Design & Integration	Lot	1				
2400	Turkwel 11/220kV						
2401	Substation Adaptation /Engineering Designs	Lot	1				
2402	Data Engineering	Lot	1				
2403	Telecommunication Design & Integration	Lot	1				
2500	Homabay 33/11 kV						
2501	Substation Adaptation /Engineering Designs	Lot	1				
2502	Data Engineering	Lot	1				
2503	Telecommunication Design & Integration	Lot	1				
2600	Muhoroni 132/33kV						
2601	Substation Adaptation /Engineering Designs	Lot	1				
2602	Data Engineering	Lot	1				
2603	Telecommunication Design & Integration	Lot	1				
2700	Orpower 11/220 Kv						
2701	Substation Adaptation /Engineering Designs	Lot	1				
2702	Data Engineering	Lot	1				

2800	Chepseon 33/11 kV						
2801	Data Engineering	Lot	1				
2802	Telecommunication Design & Integration	Lot	1				
2900	Kainuk/Sarmarch						
2901	Telecommunication Design & Integration	Lot	1				
3000	Keroka 33/11 kV						
3001	Substation Adaptation /Engineering Designs	Lot	1				
3002	Data Engineering	Lot	1				
3003	Telecommunication Design & Integration	Lot	1				
3100	Migori 33/11 kV						
3101	Substation Adaptation /Engineering Designs	Lot	1				
3102	Data Engineering	Lot	1				
3103	Telecommunication Design & Integration	Lot	1				
3200	Webuye 132/33 kV						
3201	Substation Adaptation /Engineering Designs	Lot	1				
3202	Data Engineering	Lot	1				
3203	Telecommunication Design & Integration	Lot	1				
3300	Chemosit 132/33 kV Capacitor bank bays						
3301	Substation Adaptation /Engineering Designs	Lot	1				
3302	Data Engineering	Lot	1				
3400	Kisumu 132/33 kV capacitor bank bays						
3401	Substation Adaptation /Engineering Designs	Lot	1				
3402	Data Engineering	Lot	1				
3500	Kegati 132/33 kV Capacitor bank bays						
3501	Substation Adaptation /Engineering Designs	Lot	1				
3502	Data Engineering	Lot	1				
3600	Eldoret 132/33 kV Capacitor bank bays						
3601	Substation Adaptation /Engineering Designs	Lot	1				
3602	Data Engineering	Lot	1				

3700	Lanet 132/33 kV Capacitor bank bays							
3701	Substation Adaptation /Engineering Designs	Lot	1					
3702	Data Engineering	Lot	1					
3800	Musaga 132/33 kV Capacitor bank bays							
3801	Substation Adaptation /Engineering Designs	Lot	1					
3802	Data Engineering	Lot	1					
3900	<i>Mai Mahiu 33/11 kV</i>							
3901	Substation Adaptation /Engineering Designs	Lot	1					
3902	Data Engineering	Lot	1					
3903	Telecommunication Design & Integration	Lot	1					
B	TOTAL (to Schedule No. 5. Grand Summary)							
	Name of Bidder							
	Signature of Bidder							

Notes

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid

Schedule No. 4. Installations and Other Services

Lot 3: Schedule 4

Installations and Other Services							
SCADA EQUIPMENT AT SUBSTATIONS							
Item No.	Description	Unit	Qty	Unit Price		Total Price	
				Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion
			-1	-2	-3	(1) x (2)	(1) x (3)
	SCADA Equipment at Substations						
A	Western Region Substations / Power Stations						
1	<i>Kisumu East 33/11 kV</i>						
1.1	Integration to the Scada Central system	Lot	1				
1.2	Installation & requisite Integration works	Lot	1				
2	<i>Kakamega 33/11 kV</i>						
2.1	Integration to the Scada Central system	Lot	1				
2.2	Installation & requisite Integration works	Lot	1				
3	<i>Kericho. 33/11 kV</i>						
3.1	Integration to the Scada Central system	Lot	1				
3.2	Installation & requisite Integration works	Lot	1				
4	<i>Ikonge 33/11 kV</i>						
4.1	Integration to the Scada Central system	Lot	1				
4.2	Installation & requisite Integration works	Lot	1				
5	<i>Kisii 33/11 kV</i>						
5.1	Integration to the Scada Central system	Lot	1				
5.2	Installation & requisite Integration works	Lot	1				
6	<i>Mogogosiek 33/11 kV</i>						
6.1	Integration to the Scada Central system	Lot	1				
6.2	Installation & requisite Integration works	Lot	1				

7	Obote Rd 33/11 kV						
7.1	Integration to the Scada Central system	Lot	1				
7.2	Installation & requisite Integration works	Lot	1				
8	Oikalau 33/11 kV						
8.1	Integration to the Scada Central system	Lot	1				
8.2	Installation & requisite Integration works	Lot	1				
9	Cheptulu 33/11 kV						
9.1	Integration to the Scada Central system	Lot	1				
9.2	Installation & requisite Integration works	Lot	1				
10	Elburgon 33/11 kV						
10.1	Integration to the Scada Central system	Lot	1				
10.2	Installation & requisite Integration works	Lot	1				
11	Matundura 33/11 kV						
11.1	Integration to the Scada Central system	Lot	1				
11.2	Installation & requisite Integration works	Lot	1				
12	Marula 33/11 kV						
12.1	Integration to the Scada Central system	Lot	1				
12.2	Installation & requisite Integration works	Lot	1				
13	Kihoto 33/11 kV						
13.1	Integration to the Scada Central system	Lot	1				
13.2	Installation & requisite Integration works	Lot	1				
14	Soilo 132/11 kV						
14.1	Integration to the Scada Central system	Lot	1				
14.2	Installation & requisite Integration works	Lot	1				
15	Nakuru Depot 33/11 kV						
15.1	Integration to the Scada Central system	Lot	1				
15.2	Installation & requisite Integration works	Lot	1				
16	Njoro 33/11 kV						
16.1	Integration to the Scada Central system	Lot	1				

16.2	Installation & requisite Integration works	Lot	1				
17	<i>Nyahururu 33/11 kV</i>						
17.1	Integration to the Scada Central system	Lot	1				
17.2	Installation & requisite Integration works	Lot	1				
18	<i>Rongai 33/11 kV</i>						
18.1	Integration to the Scada Central system	Lot	1				
18.2	Installation & requisite Integration works	Lot	1				
19	<i>Mwariki 33/11 kV</i>						
19.1	Integration to the Scada Central system	Lot	1				
19.2	Installation & requisite Integration works	Lot	1				
20	<i>Eldoret Depot 33/11 kV</i>						
20.1	Integration to the Scada Central system	Lot	1				
20.2	Installation & requisite Integration works	Lot	1				
21	<i>Eldoret Industrial 33/11 kV</i>						
21.1	Integration to the Scada Central system	Lot	1				
21.2	Installation & requisite Integration works	Lot	1				
22	<i>Kitale 33/11 kV</i>						
22.1	Integration to the Scada Central system	Lot	1				
22.2	Installation & requisite Integration works	Lot	1				
23	<i>Kapsabet 33/11 kV</i>						
23.1	Integration to the Scada Central system	Lot	1				
23.2	Installation & requisite Integration works	Lot	1				
24	<i>Turkwel 11/220kV</i>						
24.1	Integration to the Scada Central system	Lot	1				
24.2	Installation & requisite Integration works	Lot	1				
25	<i>Orpower11/220 Kv</i>						
25.1	Integration to the Scada Central system	Lot	1				
25.2	Installation & requisite Integration works	Lot	1				

26	Chepseon 33/11 kV						
26.1	Integration to the Scada Central system	Lot	1				
26.2	Installation & requisite Integration works	Lot	1				
27	Kainuk/Sarmarch						
27.1	Integration to the Scada Central system	Lot	1				
27.2	Installation & requisite Integration works	Lot	1				
28	Keroka 33/11 kV						
28.1	Integration to the Scada Central system	Lot	1				
28.2	Installation & requisite Integration works	Lot	1				
29	Migori 33/11 kV						
29.1	Integration to the Scada Central system	Lot	1				
29.2	Installation & requisite Integration works	Lot	1				
30	Webuye 132/33 kV						
30.1	Integration to the Scada Central system	Lot	1				
30.2	Installation & requisite Integration works	Lot	1				
31	Chemosit 132/33 kV Capacitor bank bays						
31.1	Integration to the Scada Central system	Lot	1				
31.2	Installation & requisite Integration works	Lot	1				
32	Kisumu 132/33 kV capacitor bank bays						
32.1	Integration to the Scada Central system	Lot	1				
32.2	Installation & requisite Integration works	Lot	1				
33	Kegati 132/33 kV Capacitor bank bays						
33.1	Integration to the Scada Central system	Lot	1				
33.2	Installation & requisite Integration works	Lot	1				
34	Eldoret 132/33 kV Capacitor bank bays						
34.1	Integration to the Scada Central system	Lot	1				
34.2	Installation & requisite Integration works	Lot	1				
35	Lanet 132/33 kV Capacitor bank bays						
35.1	Integration to the Scada Central system	Lot	1				

35.2	Installation & requisite Integration works	Lot	1					
36	Musaga 132/33 kV Capacitor bank bays							
36.1	Integration to the Scada Central system	Lot	1					
36.2	Installation & requisite Integration works	Lot	1					
36	Mai Mahiu 33/11 kV							
36.1	Integration to the Scada Central system	Lot	1					
36.2	Installation & requisite Integration works	Lot	1					
A	Western Region Substations / Power Stations Totals							
C	Overseas Training							
	Overseas training 1							
1.1	Training courses (detailed specification to be provided by Tenderer) for 2 KPLC Engineers excluding air travel and accomodation (each lot)	Lot	1					
	Overseas training 2							
1.2	Training courses IEC 61850 as per bidspecifications for 2 KPLC Engineers excluding air travel and accomodation (each Lot)	Lot	1					
C	Overseas training Totals							
D	Participation of KPLC personnel in Factory Tests							
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation)	Lot	1					
D	Participation of KPLC personnel in Factory Tests							
Telecommunication Equipment at Substations								
Item No.	Description	Unit	Qty	Unit Price		Total Price		
				Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion	
			-1	-2	-3	(1) x (2)	(1) x (3)	
	Telecommunication Equipment at Substations							

A	Western Region Substations / Power Stations						
1	<i>Kakamega 33/11 kV</i>						
1.2	Installation & requisite Integration works	Lot	1				
2	<i>Kericho 33/11 kV</i>						
2.1	Installation & requisite Integration works	Lot	1				
3	<i>Ikonge 33/11kV</i>						
3.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
3.2	Installation & requisite Integration works	Lot	1				
4	<i>Kisii 33/11 kV</i>						
4.1	Installation & requisite Integration works	Lot	1				
5	<i>Kisumu East</i>						
5.1	Installation & requisite Integration works	Lot	1				
6	<i>Mogogosiek 33/11 kV</i>						
6.1	Installation & Integration works	Lot	1				
7	<i>Obote Rd 33/11 kV</i>						
7.1	Installation & requisite Integration works	Lot	1				
8	<i>Oikalau 33/11 kV</i>						
8.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
8.2	Installation & Integration works	Lot	1				
9	<i>Cheptulu 33/11 kV</i>						
9.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
9.2	Installation & Integration works	Lot	1				
10	<i>Elburgon 33/11 kV</i>						
10.1	Installation & requisite Integration works	Lot	1				
11	<i>Matundura 33/11 kV</i>						
11.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
11.2	Installation & requisite Integration works	Lot	1				
12	<i>Marula 33/11 kV</i>						
12.1	Installation & Integration works	Lot	1				
12.2	Installation & testing of ADSS FO to Peer Link End	Lot	1				
13	<i>Kihoto 33/11 kV</i>						
13.1	Installation & Integration works	Lot	1				
12.2	Installation & testing of ADSS FO to Peer Link End	Lot	1				

14	Soilo 132/11 kV						
14.1	Installation & requisite Integration works	Lot	1				
15	Njoro 33/11 kV						
15.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
15.2	Installation & requisite Integration works	Lot	1				
16	Nyahururu 33/11 kV						
16.1	Installation & requisite Integration works	Lot	1				
17	Rongai 33/11 kV						
17.1	Installation & requisite Integration works	Lot	1				
18	Mwariki 33/11 kV						
18.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
18.2	Installation & requisite Integration works	Lot	1				
19	Eldoret Depot 33/11 kV						
19.1	Installation & requisite Integration works	Lot	1				
20	Eldoret Industrial 33/11 kV						
20.1	Installation & requisite Integration works	Lot	1				
21	Kitale 33/11 kV						
21.1	Installation & requisite Integration works	Lot	1				
22	Kapsabet 33/11 kV						
22.1	Installation & requisite Integration works	Lot	1				
23	Turkwel 220kV						
23.1	Installation & comissioning works	Lot	1				
24	Homabay 33/11 kV						
24.1	Installation & requisite Integration works	Lot	1				
25	Muhoroni 33/11 kV						
25.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
25.2	Installation & requisite Integration works	Lot	1				
26	Orpower 11/220kV						
26.1	Installation & requisite Integration works	Lot	1				
27	Chepseon 33/11 kV						
27.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
27.2	Installation & requisite Integration works	Lot	1				
28	Kainuk/Sarmarch						

28.1	Installation approach cable & testing of OPGW FO to Peer Link End	Lot	1				
28.2	Installation & requisite Integration works	Lot	1				
29	<i>Keroka 33/11 kV</i>						
29.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
29.2	Installation & requisite Integration works	Lot	1				
30	<i>Migori 33/11 kV</i>						
30.1	Installation & testing of ADSS FO to Peer Link End	Lot	1				
30.2	Installation & requisite Integration works	Lot	1				
31	<i>Webuye 132/33 kV</i>						
31.2	Installation & requisite Integration works	Lot	1				
31	<i>Mai Mahiu 33/11 kV</i>						
31.2	Installation & requisite Integration works	Lot	1				
31.3	Installation & testing of ADSS FO to Peer Link End	Lot	1				
A	Western Region Substations / Power Stations Totals						
B	Test Tools Specifications						
1	Splicing Kit	No.	1				
2	Termination Kit	No.	1				
3	Fault Locator	No.	1				
4	Optical Test Set	No.	1				
5	Rugged Test Laptops	No.	1				
B	Test Tools Specifications Totals						
C	Training - FO Terminal equipment						
1.1	1 week Training course (detailed specification to be provided by Tenderer & training material) for 4 KPLC personnel excluding air travel & accomodation	Lot					
C	Training Totals						
D	Participation of KPLC personnel in Factory Acceptance Tests - FO Terminal Equipment						
1.1	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation) for FO terminal Equipment	Lot					

1.2	5 days at Manufacturers Premise for 2 KPLC staff (excludes air travel & accomodation) for ADSS FO tests						
D	Participation of KPLC personnel in Factory Tests Totals						
E	TOTAL (to Schedule No. 5. Grand Summary)						
	Name of Bidder						
	Signature of Bidder						
<u>Notes</u>							
¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid							

Schedule No. 5. Grand Summary

Schedule 5:Lot 3

Item	Description	Total Price ¹	
		Foreign	Local
	Total Schedule No. 1. Plant, and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule No. 2. Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule No. 3. Design Services		
	Total Schedule No. 4. Installation and Other Services		
TOTAL (to Bid Form)			

Name of Bidder _____

Signature of Bidder _____

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1 in Single Stage Bid, Create and use as many columns for Foreign Currency requirement as there are foreign currencies

**D) CHANGES HAVE BEEN MADE ON THE VARIOUS FORMS OF SECTION VI PART
2. EMPLOYERS REQUIREMENTS AS LISTED BELOW;**

1 Chapter 1, Clause 1.3 Project Lots:Table 1-1 Summary of scope

Table 1-1 Summary of scope											
Signal list Totals											
No	Station	Indications	Alarms	Commands	Measurands	Energy Meter Inputs	Telecomms solution	Fibre approx Length (km)	Scada Installation	Telecomms Installation	Existing Scada in station
Nairobi Lot 1											
1	Doonholm 11kV						Fiber to Nairobi South with switches		No	yes	Siemens SAS
2	Industrial 66/11kV	29	107	21	42	36	Fiber to Nairobi South with switches	8	yes	yes	RTU 560
3	Karen 66/11kV						Install MUX		No	yes	ABB SAS
4	Kikuyu 66/11kV	26	78	21	43	20	Install MUX		yes	yes	RTU 560
5	Limuru 66/11kV	8	18	4	4	2	Install MUX		yes	yes	Siemens SAS
6	Athi River ss 220/66kV	48	174	22	88	40	Install MUX		yes	yes	
7	Machakos 33/11kV	16	49	8	21	6	Install MUX		yes	yes	
8	Nairobi Airport 66/11kV	30	101	18	43	26	Fiber to Embakasi with switches		no	yes	Siemens SAS
9	Nairobi West 66/11kV	48	174	22	88	40	Fiber to Embakasi available		yes	yes	RTU 560
10	Nyaga 33/11kV	18	28	13	30	2	Install FO switches	20	yes	yes	
11	Dandora 220kV						OPGW to Nairobi North	50		yes	
12	Cathedral						Install SDH Mux			yes	
13	Nairobi North	10	20	8	8	2	OPGW to Dandora	50	Yes	Yes	RTU 560
14	EPZ						Install FO switches		yes	yes	RTU 560
15	Tana						Install SDH Mux			yes	RTU 560
Mount Kenya Lot 1											
1	Embu East						Install FO Switches		no	Yes	SAS Exists

2	Embu 33/11 kV	22	83	15	36	20	Install FO switches		yes	Yes	
3	Karatina 33/11 kV	30	69	13	31	16	Fiber to Kiganjo + FO switches	20	yes	Yes	
4	Kerugoya 33/11 kV	13	35	6	16	10	Fiber to Karatina +FO switches	20	yes	Yes	
5	Nanyuki 33/11 kV	14	42	7	20	10	Install FO switches		yes	Yes	
6	Kinoru/Meru 33/11 kV	19	65	12	32	16	Install FO switches		yes	Yes	
7	Othaya 33/11 kV	26	65	12	29	14	Install FO switches +FO to Ruringu	25	yes	Yes	
8	Kiganjo 33/11 kV	22	61	11	27	12	Fiber to Kiganjo + FO switches	7	yes	Yes	ABB RTU560
9	Kamburu 220 kV						Opgw to Kiambere	40		yes	
10	Kiambere 220						OPGW to Kamburu 220 Install Mux, Distance Protection	40		yes	ABB RTU560
11	Kindaruma 11/132	14	42	7	20	10			yes	Yes	
12	Kiganjo 132 Capacitor banks	16	32	12	16				yes		ABB RTU560
13	Nanyuki 132 Capacitor banks	16	32	12	16				yes		ABB RTU560
14	Meru 132 Capacitor banks	16	32	12	16				yes		ABB RTU560

Coast Lot 2

1	Msambweni	12	24	10	13	2	Fiber to Mwambungo + FO switches	15	yes	yes	
2	Mwabungo 33/11kV	10	22	9	13	2	Fiber to Galu 132kV+ FO switches	5	yes	yes	
3	New Bamburi + 33kV reactors	16	32	12	16		Install MUX		yes	yes	ABB RTU560
4	Kanamai	8	22	8	10	2	Fibre From Bamburi+ FO switches		yes	yes	
5	Watamu	7	22	8	10	2	Fiber to Malindi 132 +FO switches	20	yes	yes	
6	Mariakani 33/11kV	6	14	7	9	2	Fiber to Mariakani 132 + FO switches	5	yes	yes	

7	Malindi 33/11kV	10	24	9	12	2	Migrate RTU and Mux		Yes	yes	ABB RTU560
8	Utange 33/ 11 kV SS	10	24	9	12	2	Fibre From Bamburi + FO switches		yes	yes	
9	Shanzu 33/ 11 kV SS						Install FO switches		No	yes	Areva
10	Kilifi 33/11	40	118	24	26	4	Install Mux		yes	no	ABB RTU560
11	Kikambala 33/ 11 kV	10	24	9	12	2	Fibre From bamburi + FO switches		yes	yes	
12	Mombasa Cement	8	22	8	10	2	Fibre From t- off + FO switches	5	yes	yes	
13	Voi 132	28	44	22	28	2	Integrate systems		Yes	yes	
14	Mtito 132 reactors	16	32	12	16		Integrate systems		yes		ABB RTU560
15	Kiboko 132kV reactors	16	32	12	16		Integrate systems		yes		ABB RTU560
16	Rabai 220kV reactors	16	32	12	16		Integrate systems		yes		ABB RTU560

Western Kenya LOT 3

	Kakamega 133/11kV	20	50	20	24	4	Install MUX		yes	yes	
	Kericho 233/11kV	23	65	12	32	4	Install MUX		yes	yes	
	Ikonge 33/11 3kV	16	42	7	25	4	Fiber to Chemosit+FO switches	15	yes	yes	
	4Kisii 33/11kV	27	99	19	43	4	Install MUX		yes	yes	
	Kisumu East 533/11kV	25	73	14	33	4	Install FO switches		yes	yes	
	Mogogosiek 633/11kV	24	69	13	31	4	Install FO switches		yes	yes	
	Obote Rd 733/11kV	28	107	21	42	4	Install FO switches		yes	yes	
	Olkalau 833/11kV	12	38	6	18	8	Install FO switches		yes	yes	
	Cheptulu 933/11kv	9	33	8	13	0	Fiber to mbale+FO switches	20	yes	yes	
	Elburgon 1033/11kV	9	25	7	15	4	Install FO switches		yes	yes	
	Matundura33 11/11kV	12	30	6	14	4	Fiber naivahsa+FO switches	30	yes	yes	
	Marula 1233/11kV	27	68	18	22	2	Fiber naivahsa+FO switches	20	yes	yes	

13	Kihoto SS 33/11kV	14	32	6	12	2	Fiber naivahsa+FO switches	20	yes	yes	
14	Soilo 33kV bays	37	73	29	14	6	existing		yes	yes	
15	Nakuru Depot 33/11kV	29	119	35	43	4	Existing		yes	no	
16	Njoro 33/11kV	12	22	8	12	2	Fiber to Soilo + FO switches	15	yes	yes	
17	Nyahururu 33/11kV	26	60	18	22	0	Fiber to Rumuruti+ Mux		yes	yes	
18	Rongai 33/11kV	10	27	6	10	6	Fiber to Soilo+ FO switches		yes	yes	
19	Mwariki 33/11kV	6	24	6	8	8	Fiber to Nakuru depot + FO switches	10	yes	yes	
20	Eldoret Depot 33/11kV	29	119	35	43	4	Mux required		yes	yes	
21	Eldoret Industrial 33/11kV	25	99	19	37	26	Install FO switches		yes	yes	
22	Kitale 33/11kV	20	30	10	18	4	Install FO switches		yes	yes	
23	Kapsabet 33/11kV	12	38	6	18	8	FO Switch		yes	yes	
24	Turkwel 11/220kV	18	81	8	15	2	Install power line carrier		Yes	Yes	
25	Muhoroni 33/11kV	12	38	6	18	12	Fiber to Soilo+ FO switches	15	Yes	Yes	Expand existing RTU 560
26	Chepseon						Install fiber to Kericho	40		Yes	Siemens
27	Keroka 33/11kV	12	38	6	18	4	Fiber to kegati+ FO switches	25	Yes	Yes	
28	Migori 33/11kV	12	38	6	18	4	Fiber to Uririi+ Mux	20	Yes	Yes	
29	Homabay 33/11kV	12	38	6	18	4	Fiber to Sondui+ FO switches		Yes	Yes	
30	Webuye 132kV	12	38	6	18	4	Install Mux		Yes	Yes	
31	Kainuk/ Sarmarch						Install approach cable +odf		no	yes	ABB RTU560
32	Or Power	14	32	6	12	4	available		yes	yes	ABB RTU560
33	Mai Mahiu 66/11 kV	12	32	10	16	2	Fiber to Naivasha + FO switches	20	Yes	Yes	

34	Kisumu 33kV Capacitors	16	32	12	16	available	yes	no	Expand existing RTU 560
35	Musaga 132kV reactors	16	32	12	16	available	Yes	no	Expand existing RTU 560
36	Kegati 33kV capacitors	16	32	12	16	available	yes	no	ABB RTU560
37	Eldoret 33kV capacitors	16	32	12	16	available	yes	no	ABB RTU560
38	Lanet 33kV capacitors	16	32	12	16	available	yes	no	ABB RTU560
39	Chemosit 33kV capacitors	16	32	12	16	available	yes	no	ABB RTU560

2 Clause 1.7.5: Project Managers Facilities

The whole clause has been deleted from the scope

3 Chapter 2, Clause 1.8.2.2: Table 2-4 Scope of RTUs and Data

Table 2.4: Scope of RTUs and Data

Region	Station	Indica tions	Alarms	Comma nds	Measura nds	Energy Meter Inputs	RTU available	
Nairobi								
1	Industrial 66/11kV	29	107	21	42	36	RTU 560	
2	Kikuyu 66/11kV	26	78	21	43	20	RTU 560	
3	Limuru 66/11kV	20	30	15	10	4	Siemens	
4	Machakos 33/11kV	16	49	8	21	6		
5	Nairobi West 66/11kV	48	174	22	88	40	RTU 560	
6	Nyaga 33/11kV	18	28	13	30	2		
7	Cathedral 66/11kV	24	88	15	25	4		
8	Athiriver 220/66 kV	16	49	8	21	6		
9	Dandora-Nairobi North	Opgw						RTU 560
Coast								
1	Msambweni	12	24	10	13	2		
2	Mwabungo 33/11kV	10	22	9	13	2		
3	Kanamai	8	22	8	10	2		
4	Watamu	7	22	8	10	2		
5	Mariakani 33/11kV	6	14	7	9	2		
6	Utange 33/ 11 kV SS	10	24	9	12	2		
7	Kilifi 33/11kV	40	118	24	26		RTU 560	
8	Kikambala 33/ 11 kV SS	10	24	9	12	2		
9	Voi 132/ 33 kV	16	32	12	16			
10	Rabai 220kV reactors	16	32	12	16		RTU 560	
11	Mtito Reactors	16	32	12	16		RTU 560	
12	Kiboko reactors	8	16	6	8		RTU 560	

13	New Bamburi reactors	16	32	12	16		RTU 560
Mount Kenya							
1	Embu 33/11 kV	22	83	15	36	20	
2	Karatina 33/11 kV	30	69	13	31	16	
3	Kerugoya 33/11 kV	13	35	6	16	10	
4	Nanyuki 33/11 kV	14	42	7	20	10	
5	Kinoru/Meru 33/11 kV	19	65	12	32	16	
6	Othaya 33/11 kV	26	65	12	29	14	
7	Kiganjo 33/11 kV	22	61	11	27	12	
8	Kindaruma 11/132kV	11	34	5	19	8	
9	Kiganjo 33 kV capacitors	16	32	12	16		RTU 560
10	Nanyuki 33 kV capacitors	16	32	12	16		RTU 560
11	Meru 132 kV reactors	16	32	12	16		RTU 560
12	Kiambere 220 kV reactors	16	32	12	16		RTU 560
13	Kiambere 220/33/11	Opgw					
Western Kenya							
1	Kakamega 33/11kV	20	50	20	24	8	
2	Kericho 33/11kV	23	65	12	32	16	
3	Ikonge 33/11kV	16	42	7	25	14	
4	Kisii 33/11kV	27	99	19	43	30	
5	Mogogosiek 33/11kV	24	69	13	31	14	
6	Kisumu East 33/11kV	25	73	14	33	16	
7	Obote Rd 33/11kV	28	107	21	42	32	
8	Olkalau 33/11kV	12	38	6	18	8	
9	Cheptulu 33/11kv	9	33	8	13	8	
10	Elburgon 33/11kV	9	25	7	15	10	
11	Matundura 33/11kV	12	30	6	14	12	
12	Marula 33/11kV	27	68	18	22	0	
13	Kihoto SS 33/11kV	14	32	6	12	0	
14	Soilo 132 /11kV	37	73	29	14	16	
15	Nakuru Depot 33/11kV	29	119	35	43	0	
16	Njoro 33/11kV	12	22	8	12	0	
17	Nyahururu 33/11kV	26	60	18	22	0	
18	Rongai 33/11kV	10	27	6	10	6	
19	Mwariki 33/11kV	6	24	6	8	8	
20	Eldoret Depot 33/11kV	29	119	35	43	0	
21	Eldoret Industrial 33/11kV	25	99	19	37	26	
22	Kitale 33/11kV	12	30	6	14	12	
23	Muhoroni 33/11 kV	10	21	5	10	4	RTU 560
24	Webuye 132/33 kV	10	27	6	10	6	
25	Kapsabet 33/11kV	12	38	6	18	8	
26	Turkwel 11/220kV	38	100	12	35	4	RTU 560
27	Chepseon 33/11 kV						Siemens
28	Orpower 11/220kV	23	78	18	30	4	RTU560
29	Mai Mahiu 66/11 kV	12	38	6	18	8	

30	Migori 33/11 kV	10	21	5	10	4	
31	Homabay 33/11 kV	6	24	6	8	8	
32	Keroka 33/11 kV	10	27	6	10	6	
33	Kisumu 33 kV capacitors	16	32	12	16		RTU 560
34	Chemosit 33 kV capacitors	16	32	12	16		RTU 560
35	Kisii 33 kV capacitors	16	32	12	16		RTU 560
36	Eldoret 33 kV capacitors	16	32	12	16		RTU 560
37	Lanet 33 kV capacitors	16	32	12	16		RTU 560
38	Musaga 132 kV reactors	16	32	12	16		RTU 560

Table 2-5 Existing RTUs in scope

Table 2-5 below is a List of stations with existing RTU which may be re-used and/ expanded to accommodate additional station data

Table 0-5: Existing RTUs in the scope

Region	Station	Data Acquisition protocol	RTU Type
NAIROBI	Industrial 66/11kV	Direct process interface	RTU 560 – ABB
	Kikuyu 66/11kV	Direct process interface	RTU 560 – ABB
	Nairobi West 66/11kV	Direct process interface	RTU 560 – ABB
	EPZ 66/33, 66/11kV	Direct process interface	RTU 560 – ABB
	Limuru 66/11kV	IEC 61850	Sicam SAS- Siemens
COAST	Malindi 33/11kV	Direct process interface	RTU 560 – ABB
	New Bamburi 33/11kV	Direct process interface	RTU 560 – ABB
	Kilifi 33/11kV	Direct process interface	RTU 560 – ABB
	Kiboko 132/33 kV	Direct process interface	RTU 560 – ABB
	Mtito 132/33 kV	Direct process interface	RTU 560 – ABB
WEST KENYA	Kisumu 132/33kV	Direct process interface	RTU 560 – ABB
	Chemosit 132/33 kV	Direct process interface	RTU 560 – ABB
	Eldoret 132/33 kV	Direct process interface	RTU 560 – ABB
	Kisii 132/33 kV	Direct process interface	RTU 560 – ABB
	Lanet 132/33 kV	Direct process interface	RTU 560 – ABB
Mt. KENYA	Kiganjo 132/33kV	Direct process interface	RTU 560 – ABB
	Nanyuki 132/33 kV	Direct process interface	RTU 560 – ABB
	Meru 132/33 kV	Direct process interface	RTU 560 – ABB
	Kiambere 132/33 kV	Direct process interface	RTU 560 – ABB

4 Chapter 3, Clause 1.11.1:Table 3-1

Table 3-1

<u>DISTRIBUTION SUBSTATIONS</u>					
	<u>Station</u>	Link End SS	Approx Link Distance (kms)	Link Available	Proposed Link Equipment
NAIROBI REGION – STATIONS CONNECTED TO NCC					
1.	Donholm 11kV	NAIROBI SOUTH	6	YES	Switches
2.	Industrial 66/11kV	NAIROBI SOUTH	8	NO	Switches
3.	Karen 66/11kV	NAIROBI WEST	14	YES	Multiplexer
4.	Limuru 66/11kV	NAIROBI NORTH	15	YES	Switches
5.	Athi River 220/66 kV	EMBAKASSI	26	No	Multiplexer
6.	Machakos 33/11kV	EMBAKASSI	61	YES	Multiplexer
7.	Nairobi Airport 66/11kV	EMBAKASSI	10	YES	Switches
8.	Nyaga 33/11kV	RUIRU SS	15	NO	Switches
9.	Dandora	NAIROBI North	50	No	Exist
10.	EPZ	ATHI RIVER SS	3	YES	Switches
11	Dandora-Nairobi North	50km OPGW			
COAST REGION – STATIONS CONNECTED TO RABAI RCC					
10.	Msambweni 33/ 11kV	Mwabungo 33/11kV	20	NO	Switches
11.	Mwabungo 33/11kV	GALU SS	5	NO	Switches
12.	Kanamai 33/11 kV SS	NEW BAMBURI	18	Yes	Switches
13.	Watamu 33/11kV	KAKUYUNI SS	15	Yes	Switches
15.	Malindi 33/11kV	KAKUYUNI SS	30	YES	Multiplexer

16.	Utange 33/ 11 kV SS	NEW BAMBURI	12	Yes	Switches
17.	Shanzu 33/11kV	NEW BAMBURI	5	YES	Switches
18.	Mombasa Cement 33/11 kV SS	3 –way splice box	4	NO	Switches
MT KENYA REGION – STATIONS CONNECTED TO KIGANJO RCC					
19.	Embu East SS	KUTUS SS	15	YES	Switches
20.	Embu 33/11kV	KUTUS SS	25	Yes	Switches
21.	Karatina SS	KIGANJO 132	25	NO	Switches
22.	Kerugoya SS	KARATINA SS	20	NO	Switches
24.	Meru 33/11kV	MERU 132	8	YES	Switches
25.	Othaya 33/11kV	RURINGU SS	21	NO	Switches
27	Kiambere-Kamburu	40 km OPGW	40	NO	OLTE
WEST KENYA REGION - STATIONS CONNECTED TO LESSOS RCC					
27.	Kakamega 33/11kV	MUSAGA SS	22	YES	Multiplexer
28.	Kericho 33/11kV	CHEMOSIT SS	25	YES	Multiplexer
30.	Kisii 33/11kV	KISII 132	18	YES	Switches
31.	Kisumu East 33/11kV	KISUMU 132	16	Yes	Switches
32.	Obote Rd 33/11kV	KISUMU 132	4	YES	Multiplexer
33.	Elburgon 33/11kV	SOILO SS	10	Yes	Switches
35.	Soilo	LANET SS	33	YES	Multiplexer
36.	Njoro 33/11 kV SS	SOILO SS	15	NO	Switches
37.	Nyahururu 33 /11 kV	RUMURUTI SS	35	NO	Switches
38.	Rongai 33/11 kV SS	SOILO SS	5	Yes	Switches
39.	Mwariki 33/11 kV SS	NAKURU DEPOT	5	NO	Switches
40.	Eldoret Industrial 33/11kV	RIVATEX	8	Yes	Switches

41.	Kitale 33/11kV	KITALE 132	20	Yes	Multiplexer
42.	Kapsabet 33/11kV	LESSOS	20	YES	Switches
43.	Turkwel220 kV	LESSOS	230	NO	ETL 600 PLC Terminal Eqpt
44	Chepseon 33/11 kV	Kericho 33/11 kV	40	No	Switches
45	Mogogosiek 33/11 kV	Chemosit 132/33	18	Yes	Switches
46	Ikonge 33/11 kV	Chemosit 132/33	20	No	Switches
47	Keroka 33/11 kV	Sotik 132/33 kV	25	No	Switches
48	Migori 33/11 kV	Awendo 132/33 kV	17	No	Switches
49	Homabay 33/11 kV	Sondu Miriu	50	Yes	Switches
50	Muhoroni 33/11 kV	Muhoroni 132/33kV	15	No	Switches
51	Cheptulu 33/11kV	Mbale	20	No	Switches
52	Webuye 132/33 kV	Musaga 132/33 kV	18	Yes	Multiplexer
53	Mai Mahiu 66/11 kV	Naivasha 132 kV	20	No	Switches
54	Kihoto 33/11 kV	Naivassa 132 kV	15	Yes	Switches
55	Marula 33/11 kV	Naivasha 132 kV	20	No	Switches
56	Matundura 33/11 kV	Naivasha 132 kV	30	No	Switches
57	OI kalou 33/11 kV	Lanet 123 kV	30	Yes	Switches

Clause 1.11.2.2 Table 3-2 Estimated distances

Table 3-2 Estimated Distances

REGION	DISTRIBUTION STATION	ORIGIN	APPROXIMATE DISTANCE (KM)
Nairobi	Industrial SS	Nairobi South SS	8
	Nyaga 33/11 SS	Ruiru S/S	15
opgw	Dandora	Nairobi North	50
		SUB TOTAL	73
Coast	Msambweni 33/11 kV	Mwabungo 33/11 kV	20
	Mwabungo 33/11kV	Galuu SS	5
	Watamu 33/11kV	Kakuyuni SS	15
	New Bamburi 132	Rabai SS	35
	Mombasa cement	3-Way	5
	Mariakani 33	Mariakani 132	4
		SUB TOTAL	84
Mt Kenya	Karatina SS	Kiganjo 132	25
	Kerugoya SS	Karatina SS	20
	Othaya 33/11kV	Ruringu SS	21
opgw	Kamburu	Kiambere	40
		SUB TOTAL	106
West Kenya	Nyahururu 33/11kV	Rumuruti SS	33
	Rongai SS	Soilo SS	5
	Mwariki SS	Nakuru Depot	5
	Mai mahiu SS	Naivasha 132	20
	Marula SS	Naivasha 132	20
	Matundura SS	Naivasha 132	30
	Njoro SS	Soilo SS	20
	Chepseon SS	Kericho SS	40
	Ikonge SS	Chemosit SS	18
	Keroka SS	Sotik SS	25
	Migori SS	Uriri	18
	Muhoroni 33	Muhoroni 132	15
	Cheptulu SS	Mbale office	20
	SUB TOTAL	269	
	TOTAL	459	

Clause 1.11.2.2 Table 3-3 Distribution of ODF

Table 3-3 Distribution of ODF's

REGION	DISTRIBUTION/Transmi STATION	ORIGIN	48 Port ODFs
Nairobi	Industrial SS	Nairobi South SS	2
	Nyaga 33/11 SS	Ruiru S/S	2
	Dandora	Nairobi North	4
		SUB TOTAL	8
Coast	Msambweni 33/11 kV	Mwabungo 33/11 kV	2
	Mwabungo 33/11kV	Galu SS	2
	Watamu 33/11kV	Kakuyuni SS	2
	New Bamburi 132	Rabai SS	2
	Mombasa cement	3Way	2
	Mariakani 33	Mariakani 132	2
		SUB TOTAL	12
Mt Kenya	Karatina SS	Kiganjo 132	2
	Kerugoya SS	Karatina SS	2
	Othaya 33/11kV	Ruringu SS	2
	Kamburu	Kiambere	2
		SUB TOTAL	8
West Kenya	Nyahururu 33/11kV	RumurutiSS	2
	Rongai SS	Soilo SS	2
	Mwariki SS	Nakuru Depot	2
	Mai mahiu SS	Naivasha 132	2
	Marula SS	Naivasha 132	2
	Matundura SS	Naivasha 132	2
	Njoro SS	Soilo SS	2
	Chepseon SS	Kericho SS	2
	Ikonge SS	Chemosit SS	2
	Keroka SS	Sotik SS	2
	Migori SS	Uriri	2
	Muhoroni 33	Muhoroni 132	2
	Cheptulu SS	Mbale office	2
		SUB TOTAL	26
		TOTAL	54

Clause 1.11.2.2 Table 7 Proposed link Equipment

Table 7 below gives direction of the equipment required at each node.

Table 7 Proposed Link Equipment

<u>DISTRIBUTION SUBSTATIONS</u>			
	<u>Station</u>	Link End SS	Proposed Link Equipment
NAIROBI REGION – STATIONS CONNECTED TO NCC			
1.	Donholm 11kV	NAIROBI SOUTH	Switches
2.	Industrial 66/11kV	NAIROBI SOUTH	Switches
3.	Karen 66/11kV	NAIROBI WEST	Multiplexer
4.	Limuru 66/11kV	NAIROBI NORTH	Switches
5.	Athi River 220/66kV	EMBAKASSI	Multiplexer
6.	Machakos 33/11kV	EMBAKASSI	Multiplexer
7.	Nairobi Airport 66/11kV	EMBAKASSI	Switches
8.	Nyaga 33/11kV	RUIRU SS	Switches
9.	Cathedral	Nairobi west	Multiplexer
10.	EPZ	ATHI RIVER SS	Switches
11	Tana 11/66 kV	Juja 132/66 kV	Multiplexer
12	Kikuyu 66/11 kV		Switches
13	Nairobi west	Embakasi	Multiplexer
COAST REGION – STATIONS CONNECTED TO RABAI RCC			
14.	Msambweni 33/ 11kV	Mwabungo 33/11kV	Switches
15.	Mwabungo 33/11kV	GALU SS	Switches
16.	Kanamai 33/11 kV SS	NEW BAMBURI	Switches
17.	Watamu 33/11kV	KAKUYUNI SS	Switches
18.	Kilifi 33/11kV	NEW BAMBURI	Multiplexer
19.	Malindi 33/11kV	KAKUYUNI SS	Multiplexer

20.	Utange 33/ 11 kV SS	NEW BAMBURI	Switches
21.	Shanzu 33/11kV	NEW BAMBURI	Switches
22.	NEW BAMBURI	RABAI SS	Multiplexer
23.	Mariakani 33/11 kV	Mariakani 132	Switches
24.	Voi 132	Rabai SS	Multiplexer
25.	Mombasa cement	NEW BAMBURI	switches
26.	Kikambala	NEW BAMBURI	switches
MT KENYA REGION - STATIONS CONNECTED TO KIGANJO RCC			
27.	Embu East SS	KUTUS SS	Switches
28.	Embu 33/11kV	KUTUS SS	Switches
29.	Karatina SS	KIGANJO 132	Switches
30.	Kerugoya SS	KARATINA SS	Switches
31.	Kiganjo 33/11KV	KIGANJO 132	Switches
32.	Meru 33/11kV	MERU 132	Switches
33.	Othaya 33/11kV	RURINGU SS	Switches
34.	Nanyuki 33	Nanyuki 132	Switches
WEST KENYA REGION - STATIONS CONNECTED TO LESSOS RCC			
27.	Kakamega 33/11kV	MUSAGA SS	Multiplexer
28.	Kericho 33/11kV	CHEMOSIT SS	Multiplexer
	Cheptulu	Kisumu 132	Switches
30.	Kisii 33/11kV	KISII 132	Switches
31.	Kisumu East 33/11kV	KISUMU 132	Switches
32.	Obote Rd 33/11kV	KISUMU 132	Multiplexer
33.	Elburgon 33/11kV	SOILO SS	Switches

34.	Matundura 33/11kV	LANET SS	Multiplexer
35.	Soilo	LANET SS	Multiplexer
36.	Njoro 33/11 kV SS	SOILO SS	Switches
37.	Nyahururu 33 /11 kV	RUMURUTI SS	Switches
38.	Rongai 33/11 kV SS	SOILO SS	Switches
39.	Mwariki 33/11 kV SS	NAKURU DEPOT	Switches
40.	Eldoret Industrial 33/11kV	RIVATEX	Switches
41.	Kitale 33/11kV	KITALE 132	Switches
42.	Kapsabet 33/11kV	LESSOS	Switches
43	Kihoto 33/11 kV	Naivasha 132 kV	Switches
44	Chepseon 33/11 kV	Kericho 33 kV	Switches
45	Kericho 33/11 kV	Chemost 132 kV	Multiplexer
46	Mogogosiek 33/11 kV	Chemosit 132 kV	Switches
47	Ikonge 33/11 kV	Chemosit 132 kV	Switches
48	Keroka 33/11 kV	Sotik 132 kV	Switches
49	Migori 33/11 kV	Awendo 132 kV	Switches
50	Homabay 33/11 kV	Sondu Miriu	Switches
51	Muhoroni 33/11 kV	Muhoroni 132 kV	Switches
52.	Turkwel 220 kV	LESSOS	PLC Terminal Equipment

Clause 1.12 Radios

The whole clause has been deleted from scope

5 Chapter 4, Clause 1.13.1 General remarks

Kenya Power uses -48 VDC Supplies for its Scada and telecommunication sites across the country.

Clause 1.13.3.9.1 Dual Charger, single battery system

1.13.3.9.1 Charger, Battery System

Charging system shall have one charger with specifications as indicated in 3.9.1

- a) The charger unit shall be capable of supplying the initial charging requirements, boost charging the battery subsequent to an emergency discharge and supplying the maximum load whilst on float.
- b) The charger and battery sets shall be interconnected to ensure full redundancy as shown in fig. 4.2.3.9.1:

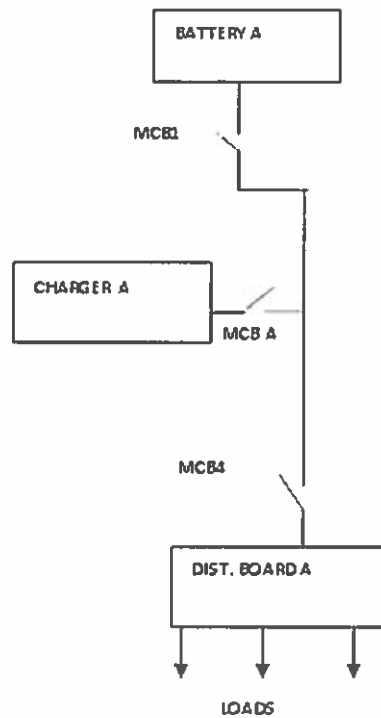


Figure 0-1

- c) The charger shall connect to its own DC distribution Board with capacity to connect all loads and spares as specified elsewhere in this specification.
- d) The charger shall have its output protected by an MCB which shall trip in event of a major internal fault in the charger.
- e) The normal operation shall be MCBA, MCB 1, MCB4 shall be closed.
- f) In event of a fault in a battery bank, its MCB shall trip. Each trip shall generate a battery faulty alarm and pick a dry alarm contact.

The chargers shall have Event controlled charge such that the event in cl 4.6.2, i shall set a charge mode to accommodate two battery banks.

- g) Each charger shall be capable to charge and monitor the two battery sets in parallel.

- h) Rectifier spare capacity shall be as spelled in cl. 4.9.1 (a) for each charger.
- i) Each battery bank shall be designed for full load standby as specified elsewhere in this specification.
- j) The supplier may submit design proposals, showing how to achieve the required redundancy for both systems.

Clause 1.13.3.9.2 Dual Charger, dual battery system

The whole clause has been deleted from scope

Yours faithfully,

For: KENYA POWER & LIGHTING COMPANY LIMITED.

for 
Eng. MICHAEL ADHAMBO
MANAGER-PROJECTS DEVELOPMENT

