



KENYA ELECTRICITY GENERATING COMPANY PLC

RFx: 5000014891

KGN-GDD-050-2024

TENDER FOR SUPPLY, INSTALLATION AND COMMISSIONING OF A FIBER OPTIC CABLE NETWORK AT OLKARIA.

(Women Enterprise)

Dated: 28th March, 2024

Addendum No.1.

In accordance with the **Tender for Supply, Installation and Commissioning of a Fiber Optic Cable Network at Olkaria.**, KenGen issues an **Addendum No.1** as follows:

Revised Price Schedule

PRICE SCHEDULE FORMS

[The tenderer shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the Price Schedules shall coincide with the List of Goods and Related Services specified by the Procuring Entity in the Schedule of Requirements.]

PRICE SCHEDULE FOR GOODS

Item	Product	Qty	Unit Price	Total Price
1.	Supply and installation of a 24-Core , armoured Single Mode Optical fiber cable for underground installation.	2500Meters		
2.	Supply and installation of a 8-Core , armoured Single Mode Optical fiber cable for underground installation.	350Meters		
3.	Supply and Installation of overhead 24-core ADSS optical fiber cable.	230Meters		
4.	Supply and installation of ADSS cable pole mounting kits complete with accessories.	3Pcs		
5.	Supply and install suitably sized HDPE pipes.	3000Meters		
6.	Warnings tape for Underground cable installations.	3500Meters		
7.	Fabricate and install mounting poles for outdoor access points	7Pcs		
8.	Supply and install Outdoor naturally ventilated lockable factory made	7Pcs		

	electrical cabinets as specified			
9.	Supply weatherproof underground Optical fiber splice kits complete with accessories for underground Optical fiber installations.	10Pcs		
10.	Construction of manholes complete with covers as specified.	9No.		
11.	Supply and installation of Size 6U, 19 inch, 600mm deep wall mount LAN cabinets.	2Pcs		
12.	Supply and installation of 1No.size 20U, 19 inch 600mm deep free standing LAN cabinet.	1Pc		
13.	Concrete Danger/Hatari/OFC surface marking posts	200Pcs		
14.	3-core (L,N& E) 2.5mm sq armoured cable for underground. Installation.	900Meters		
15.	MCCB-20Amps, DIN Rail mounted	10Pcs		
16.	Cisco Catalyst 1000 series L2 switch,8port -model C1000-8FP-2G-L or equivalent switch of Type Cisco, include 3-year Smartnet license.	5Pcs		
17.	Optical Fiber Aggregation Switch Type Cisco Catalyst 3850-12SE-E-12 Ports - 1Gigabit Ethernet SFP based (or equivalent) complete with all required modules. Include 3-year smart net license.	1Pc		
18.	Cisco Catalyst 9200 series switch-model C9200L-24P-4G or equivalent Cisco Switch with 24-port PoE+, and 4No SFP+ ports uplinks, include 3-year Smartnet license. Include uplink Network module.	1Pc		
19.	Cisco Catalyst 9124AX series Outdoor wi-fi 6 Access Points (model No. C9124AXI-ROW) with internal omni-directional antenna, include 3-year Smartnet license.	10Pcs		
20.	Cisco Catalyst 9115AXI- E wi-fi 6 Indoor Access Points with internal Antenna, include 3-year Smartnet license.	10Pcs		
21.	240Vac power injector for Cisco Catalyst 9124AX series Outdoor Access points.	15Pcs		
22.	Supply and installation of Rackmount Single phase Line interactive 1Kva UPS systems as specified.	3Pcs		
23.	Supply and installation of Rackmount Single phase Line interactive 3Kva UPS	2Pc		

	systems as specified.			
24.	Supply and install 30Amps rated, Single phase Automatic Voltage switchers Type Sollatek AVS 30 or equivalent	15Pcs		
25.	Optical fiber patch panels- 19", 1U High, 24port	1Pc		
26.	Optical fiber patch panels- 19", 1U High, 8port	4Pcs		
27.	Optical fiber Splice enclosures to fit into installed outdoor electrical cabinets	7Pcs		
28.	SFP Modules-Single mode, duplex.	30pcs		
29.	SC-LC Single mode optical fiber patch cord- 10meters	4Pcs		
30.	SC-LC Single mode optical fiber patch cord- 1meter	30pcs		
31	Galvanized Iron pipes 18ft, 3.5 Inch diameter for road crossings.	10Pcs		
32.	Under road ducting/micro tunneling for road crossings.	5		
33.	Installation accessories and materials (PVC Conduits, Flexible conduits, Metallic Trunkings, Angle lines, PVC trunkings, Screws, Bolts, Cement, Ballast etc)	Lot		
34.	Any other materials required to ensure completeness of works as specified. (List the materials with cost per line item.)	Lot		
35.	Installation (including labour and related services), Test and Commissioning.	Lot		
36.	Comprehensive warranty services for 1year.	Lot		
37.	Technical Training-Sophos XG Firewall Administrator	5staff		
			Sub Total	
			VAT	
			Withholding Tax	
			Grand Total inclusive of Applicable Taxes	

TENDERER'S NAME: _____

TENDERER'S SIGNATURE _____

DATE _____

TENDERER'S STAMP _____

PART 2: SUPPLY REQUIREMENTS

SECTION V – REVISED SCHEDULE OF REQUIREMENTS

Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the Tendering document by the Procuring Entity, and shall cover, at a minimum, a description of the goods and services to be supplied and the delivery schedule.

The objective of the Schedule of Requirements is to provide sufficient information to enable tenderers to prepare their Tenders efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITT 42.1.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to tenderers pursuant to the Incoterms rules that “delivery” takes place when goods are delivered to the final place of delivery, and (b) the date prescribed herein from which the Procuring Entity's delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

Item	Product	Qty
1.	Supply and installation of a 24-Core , armoured Single Mode Optical fiber cable for underground installation.	2500Meters
2.	Supply and installation of a 8-Core , armoured Single Mode Optical fiber cable for underground installation.	350Meters
3.	Supply and Installation of overhead 24-core ADSS optical fiber cable.	230Meters
4.	Supply and installation of ADSS cable pole mounting kits complete with accessories.	3Pcs
5.	Supply and install suitably sized HDPE pipes.	3000Meters
6.	Warnings tape for Underground cable installations.	3500Meters
7.	Fabricate and install mounting poles for outdoor access points	7Pcs
8.	Supply and install Outdoor naturally ventilated lockable factory made electrical cabinets as specified	7Pcs
9.	Supply weatherproof underground Optical fiber splice kits complete with accessories for underground Optical fiber installations.	10Pcs
10.	Construction of manholes complete with covers as specified.	9No.
11.	Supply and installation of Size 6U, 19 inch, 600mm deep wall mount LAN cabinets.	2Pcs
12.	Supply and installation of 1No.size 20U, 19 inch 600mm deep free standing LAN cabinet.	1Pc
13.	Concrete Danger/Hatari/OFC surface marking posts	200Pcs
14.	3-core (L,N& E) 2.5mm sq armoured cable for underground. Installation.	900Meters
15.	MCCB-20Amps, DIN Rail mounted	10Pcs
16.	Cisco Catalyst 1000 series L2 switch,8port -model C1000-8FP-2G-L or equivalent switch of Type Cisco, include 3-year Smartnet license.	5Pcs

17.	Optical Fiber Aggregation Switch Type Cisco Catalyst 3850-12SE-E-12 Ports -1Gigabit Ethernet SFP based (or equivalent) complete with all required modules. Include 3-year smart net license.	1Pc
18.	Cisco Catalyst 9200 series switch-model C9200L-24P-4G or equivalent Cisco Switch with 24-port PoE+, and 4No SFP+ ports uplink, include 3-year Smartnet license. Include uplink Network module.	1Pc
19.	Cisco Catalyst 9124AX series Outdoor wi-fi 6 Access Points (model No. C9124AXI-ROW) with internal omni-directional antenna, include 3-year Smartnet license.	10Pcs
20.	Cisco Catalyst 9115AXI- E wi-fi 6 Indoor Access Points with internal Antenna, include 3-year Smartnet license.	10Pcs
21.	240Vac power injector for Cisco Catalyst 9124AX series Outdoor Access points.	15Pcs
22.	Supply and installation of Rackmount Single phase Line interactive 1Kva UPS systems as specified.	3Pcs
23.	Supply and installation of Rackmount Single phase Line interactive 3Kva UPS systems as specified.	2Pc
24.	Supply and install 30Amps rated, Single phase Automatic Voltage switchers Type Sollatek AVS 30 or equivalent	15Pcs
25.	Optical fiber patch panels- 19", 1U High, 24port	1Pc
26.	Optical fiber patch panels- 19", 1U High, 8port	4Pcs
27.	Optical fiber Splice enclosures to fit into installed outdoor electrical cabinets	7Pcs
28.	SFP Modules-Single mode, duplex.	30pcs
29.	SC-LC Single mode optical fiber patch cord- 10meters	4Pcs
30.	SC-LC Single mode optical fiber patch cord- 1meter	30pcs
31.	Galvanized Iron pipes 18ft, 3.5 Inch diameter for road crossings.	10Pcs
32.	Under road ducting/micro tunneling for road crossings.	5
33.	Installation accessories and materials (PVC Conduits, Flexible conduits, Metallic Trunkings, Angle lines, PVC trunkings, Screws, Bolts, Cement, Ballast etc)	Lot
34.	Any other materials required to ensure completeness of works as specified. (List the materials with cost per line item.)	Lot
35.	Installation (including labour and related services), Test and Commissioning.	Lot
36.	Comprehensive warranty services for 1year.	Lot
37.	Technical Training-Sophos XG Firewall Administrator	5staff

REVISED TECHNICAL SPECIFICATIONS

- 1.1 The purpose of the Technical Specifications (TS), is to define the technical characteristics of the Goods and Related Services required by the Procuring Entity. The Procuring Entity shall prepare the detailed TS consider that:
- i) The TS constitute the benchmarks against which the Procuring Entity will verify the technical responsiveness of Tenders and subsequently evaluate the Tenders. Therefore, well-defined TS will facilitate preparation of responsive Tenders by tenderers, as well as examination, evaluation, and comparison of the Tenders by the Procuring Entity.
 - ii) The TS shall require that all goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
 - iii) The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
 - iv) The PPRA encourages the use of metric units.
 - v) Standardizing technical specifications may be advantageous, depending on the complexity of the goods and the repetitiveness of the type of procurement. Technical Specifications should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
 - vi) Standards for equipment, materials, and workmanship specified in the Tendering document shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words “or substantially equivalent.” When other standards or codes of practice are referred to in the TS, whether from the Procuring Entity's or from other eligible countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.
 - vii) Reference to brand names and catalogue numbers should be avoided as far as possible; where unavoidable the words “or at least equivalent” shall always follow such references.
 - viii) Technical Specifications shall be fully descriptive of the requirements in respect of, but not limited to, the following:
 - a) Standards of materials and workmanship required for the production and manufacturing of the Goods.
 - b) Any sustainable procurement technical requirements shall be clearly specified.
- 1.2 To encourage tenderers' innovation in addressing sustainable procurement requirements, as long as the Tender evaluation criteria specify the mechanism for monetary adjustments for the purpose of Tender comparisons, tenderers may be invited to offer Goods that exceeds the specified minimum sustainable procurement requirements.
- i) Detailed tests required (type and number).
 - ii) Other additional work and/or Related Services required to achieve full delivery/completion.
 - iii) Detailed activities to be performed by the Supplier, and participation of the Procuring Entity thereon.
 - iv) List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.
- 1.3 The TS shall specify all essential technical and performance characteristics and requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. Whenever necessary, the Procuring Entity shall include an additional ad-hoc Tendering form (to be an Attachment to the Letter of Tender), where the tenderer shall

provide detailed information on such technical performance characteristics in respect to the corresponding acceptable or guaranteed values

1.4 When the Procuring Entity requests that the tenderer provides in its Tender a part or all of the Technical Specifications, technical schedules, or other technical information, the Procuring Entity shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the tenderer in its Tender.

1.5 If a summary of the Technical Specifications(TS) has to be provided, the Procuring Entity shall insert information in the table below. The tenderer shall prepare a similar table to justify compliance with the requirements.

Summary of Technical Specifications: The Goods and Related Services shall comply with following Technical Specifications and Standards:

1.5.1 Description of works and technical requirements.

KenGen intends to procure Labour and Technical services for Supply of all required materials and deployment of an optical fiber network infrastructure to various sites within the Lakeside and Runda housing estates.

The successful bidder(contractor) shall be required to do a detailed design of the infrastructure required and carry out installations according to the design. The design must conform to acceptable standards to ensure quality of works and achieve high levels of sustainability, performance, and availability of the installed infrastructure. The proposed design shall be submitted as part of the bid for this tender.

When undertaking the works, the successful bidder shall adhere to best practice and ensure compliance with all existing compliance and regulatory requirements. Any substandard work shall be rejected and redone at the contractor's cost.

Trenches for underground cable installations shall be at least 1ft wide and 2ft deep for the full length of the installation.

It shall be the responsibility of the successful bidder to ensure both the safety and security of its employees and materials.

1.5.2. Scope of Works

The works entail Supply of all required materials and deployment of an optical fiber network infrastructure to various sites.

Specific works are as detailed below.

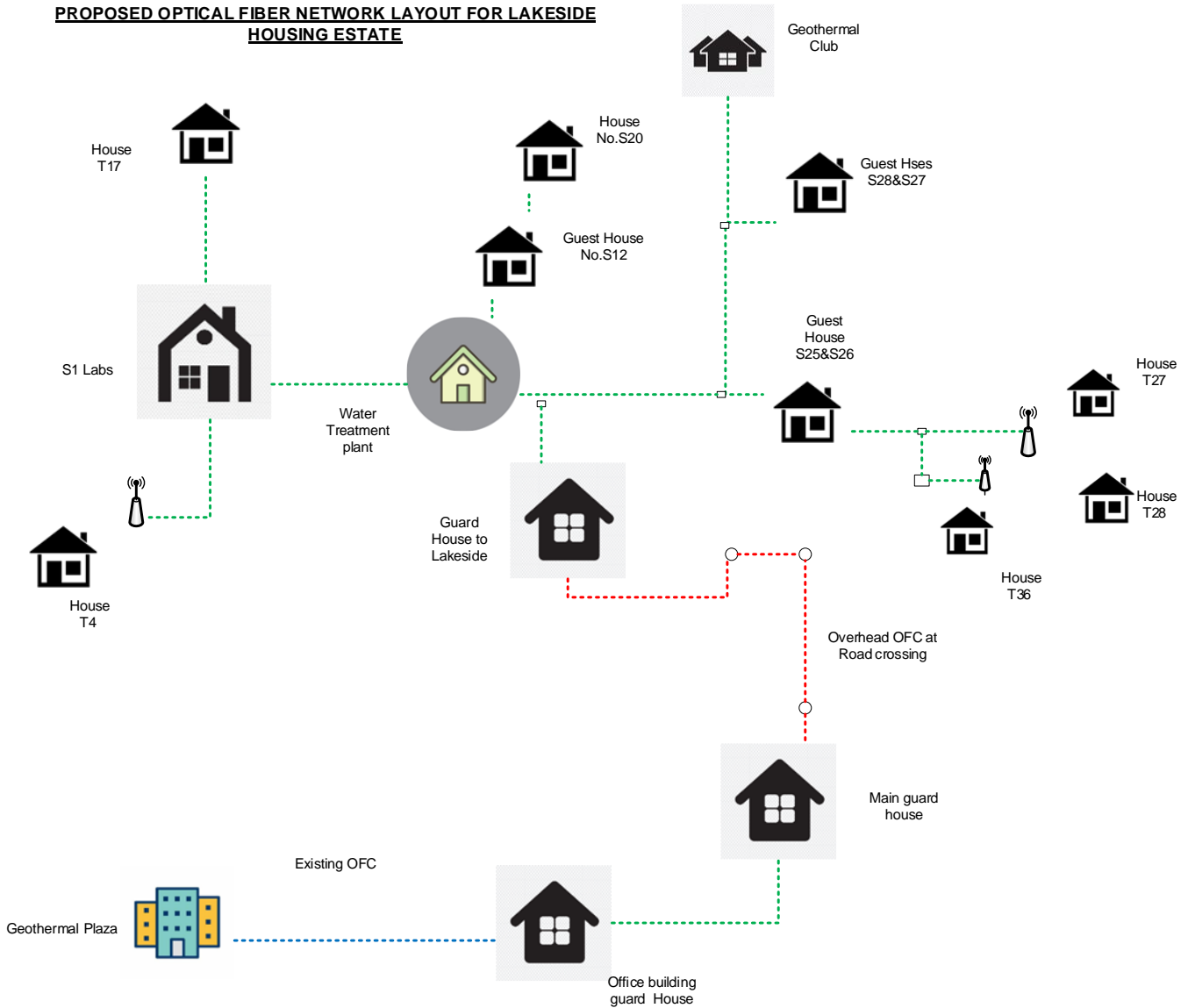
(a) At Lakeside housing estate

- (i) Supply of materials and underground installation of a 24-Core , armoured Single Mode Optical fiber cable from Guard house to Lake side housing estate to Water treatment plant, and from Water treatment plant to SI Labs, Guest houses S25, S26, S27 & S28, Geothermal club and to outdoor access points to be installed adjacent to House Nos.S20,T36 and T28.In addition, the 24-core underground armoured optical fiber cable shall also be installed between S1 Labs to connect outdoor access points to be installed near House Nos.T4 and T17.
- (ii) Supply and installation of 250Meters of an overhead 24-Core Single Mode All Dielectric Self Supporting (ADSS) cable between Office building guard house and Guard house to Lake side housing estate. The cable shall be installed on existing poles across Moi South Lake road between the Main Guard House and Guard House to Lakeside housing estate.
- (iii) Supply and installation of 3No.ADSS cable pole mounting kits complete with accessories for installations in (ii) above.

- (iv) Supply and install approx. suitably sized HDPE pipes, and warnings tape for underground cable installations.
- (v) Fabricate and install Five (5No.) mounting poles for outdoor access points.
- (vi) Supply, installation and configuration of Nine (9No.) indoor access points-2 each for Guest houses S25, S26, S27 & S28, and one for SI Labs.
- (vii) Supply, installation and configuration of Five (5No.) outdoor access points adjacent to House Nos.S20, T36, T28, T4 and T17.
- (viii) Extend 240Vac mains power supply to outdoor access points adjacent to House Nos.S20, T36,T28, T4 and T17.This shall be done using 3-core (L,N& E) 2.5mm sq armoured cable that shall be installed underground.
- (ix) Construction of 7No.standard manholes for Telecommunications installations -internal dimensions not less than 3ft X3ft, 3ft deep, complete with manhole covers.
- (x) Supply and installation of 10No.weatherproof underground Optical fiber splice kits complete with accessories.
- (xi) Supply and installation of 2No.size 6U, 19 inch,600mm deep wall mount LAN cabinets at Guest houses S25 & S28. The cabinets shall be lockable, have transparent front and perforated side panels, and 2No, thermostat-controlled fans for adequate cooling.
- (xii) Supply, install and configure Five(5No.) Cisco Catalyst 1000 series L2 switch,8port -model C1000-8FP-2G-L or equivalent switch of Type Cisco, include 3-year Smartnet license or equivalent switch of Type Cisco with same or better features and functionalities.
- (xiii) Supply and installation of 1No.size 20U, 19 inch free standing LAN cabinet at Water treatment plant and relocate existing cabinet to Guard house to Lake side housing estate. The cabinet shall be lockable, have transparent front and perforated side panels, and 2No, thermostat-controlled fans for adequate cooling.
- (xiv) At Water treatment plant, supply install and configure an Optical fiber Aggregation Switch Type Cisco Catalyst 3850- 12SE-E- 12 Ports -1Gigabit Ethernet SFP based (or equivalent) for backhauling of traffic to Geothermal plaza data center.
- (xv) Fabricate and install concrete Danger/Hatari/OFC surface marking posts for identification of underground cable installation routes. The posts shall be installed at intervals of 20meters along the cable route.
- (xvi) Supply and installation of Rackmount Single phase Line interactive UPS systems as specified- 2No.3Kva UPS for devices at Water treatment plant and S1 Lab, and 3No.1 Kva UPS to be installed at Guest House Nos.S25, S28 and Guard House to Lakeside Housing estate.
- (xvii) Supply and install Fifteen (15 No.) 30Amps rated, Single phase Automatic Voltage switchers Type Sollatek AVS 30 or equivalent with protection against High Voltage, Low voltage, Spikes & Surges, powerback surges and Loss of Neutral (LoN).
- (xviii) Supply and install Outdoor naturally ventilated lockable factory made outdoor electrical cabinets-approx, size 30CM Wide, 40CM High and 20 CM Deep complete with suitable length of DIN rails for holding power supply MCCBs and Automatic Voltage Switchers.

Attached below is the layout of the proposed installation for the Lakeside Housing estate.

PROPOSED OPTICAL FIBER NETWORK LAYOUT FOR LAKESIDE HOUSING ESTATE



(b) At Runda estate and adjacent areas

- (i) Supply and install an 8-core Single mode underground armoured optical fiber cable and diversion of a total of 8 cores (4 cores each at two points) from an existing single mode optical fiber cable to GTC building and terminate to Outdoor access points to be installed adjacent to Houses No.S47 and S53.
- (ii) Extend 240Vac mains power supply to outdoor access points adjacent to outdoor access points in (i) above using 3-core (L,N& E) 2.5mm sq armoured cable that shall be installed underground.
- (iii) Supply and install suitably sized HDPE pipes, and warning tape for underground cable installations.
- (iv) Fabricate and install Two (2No.) mounting poles adjacent to Houses No.S47 and S53 for mounting Outdoor access points in (i) above.
- (v) Construction of 2No.standard manholes for Telecommunications installations -internal dimensions not less than 3ft X3ft, 3ft deep, complete with manhole covers.
- (vi) Supply and installation of 2No.underground Optical fiber splice kits complete with accessories.
- (vii) Fabricate and install concrete Danger/Hatari/OFC marking posts for identification of underground cable installation paths.

(viii) Supply, install and test 7 No. outdoor access points- Two access points to be pole mounted adjacent to Houses No.S47 and S53 ,and in house Nos...S57,S48,S 36,S34, and social Hall. All access points shall be configured to connect to the corporate LAN via bridging to either of the two outdoor access points adjacent to House Nos.S47 and S53.

(ix) Supply, install and test 1 No. Indoor access point Type Cisco model No. Cisco Catalyst 9115AXI- E wi-fi 6 with internal Antenna at the social Hall.

(x) LAN extension from Geolabs main building to adjacent materials lab building- Optical fiber installation and one 8-port LAN switch as specified.

All access points supplied shall be installed, configured and integrated into the existing corporate Wi-Fi network. The devices shall be either wall or pole mounted. Power supply to the pole mounted outdoor access points shall be extended from the nearest mains AC distribution board for street lighting or as may exist.

For purposes of compatibility and ease of integration to the existing corporate ICT infrastructure that mainly comprises Cisco Network devices, all access points and switches shall be of type Cisco. The devices shall be customized for use in Kenya. The specific models are as follows;

- Indoor Access Points- Cisco Catalyst 9115AXI- E wi-fi 6 Indoor Access Points with internal Antenna, or equivalent with similar or better features.
- Outdoor Access Points- Cisco Catalyst 9124AX series (model No. C9124AXI-ROW) with internal omni-directional antenna, or equivalent with similar or better features.
- Optical Fiber Aggregation switch shall be Cisco Catalyst 3850-12SE-E-12 Ports - 1Gigabit Ethernet SFP based or an equivalent Cisco switch.
- Layer2/Layer3 switch- Cisco Catalyst 9200 series switch (Model C9200-24PB) with 24-port PoE+, and 2 No SFP+ ports. This shall be supplied with appropriate uplink network module.
- 8-port Layer2 Ethernet switches shall be Cisco Catalyst 1000 series switch-model C1000-8FP-2G-L or equivalent switch of Type Cisco.

All Access points and Ethernet Switches shall be installed with the latest IOS software and/or firmware, and each shall include a 3-year Smartnet license.

UPS Systems to be supplied shall conform to the specifications as tabulated below;

KenGen Specification	1000VA (1Kva)	3000VA(3Kva)	Bidder's Offer (MUST FILL)
General requirements			
Capacity	1KVA	3KVA	
No.of phases (Input, Output)	Single phase	Single phase	
Manufacturer	Bidder to Indicate	Bidder to Indicate	
Type & Model	Bidder to Indicate	Bidder to Indicate	
Country of Manufacture	Bidder to Indicate	Bidder to Indicate	
Operation	Continuous	Continuous	
No.of Rack Units	2U	2U	
Battery Type	Lithium-ion (Li-ion)	Lead-acid battery	
Battery Recharge Time	≤3hours	≤3hours	
Battery Charger Power	≥ 70W	≥ 180W	
Mounting mode	Rack mounted	Rack mounted	
Input			
Input power protection type	Circuit breaker	Indicate	

Standard input voltage	230Vac	230Vac	
Input voltage limits	160-280Vac	160-280Vac	
Rated power in Watts	800Watts	2700 W	
Rated power in VA	1000VA	3000KVA	
Input frequency	50/60 Hz +/-3Hz autosensing	50/60 Hz +/-3Hz autosensing	
Input connector Type	IEC 60320 C14	BS1363A British, IEC 320 C20	
Output			
Crest Factor	3:1	Indicate	
Harmonic distortion	<5%	Indicate	
Output voltage	230Vac	230Vac	
Output power in VA	1000VA	3000VA	
Output power in W	800W	2700W	
Transfer Time	6ms, Max 10ms	4ms	
Output connector Type	IEC 60320 C13	IEC 320 C13	
UPS Type	Line Interactive	Line Interactive	
Output AC Wave Type/form- (AC Mode & Battery Mode)	Pure Sinewave	Pure Sinewave	
Power Factor	0.8	0.9	
Output Frequency	50/60 Hz +/-3Hz sync to mains.	50/60 Hz +/-3Hz sync to mains.	
Conformance			
Product Certifications	CE, EAC ,RCM	CE, EAC, VDE	
Standards	EN/IEC 62040- 2:2006/AC:2006, EN/IEC 62040-2:2018	EN/IEC 62040- 1:2019/A11:2021 EN/IEC 62040- 2:2006/AC:2006	
Environmental			
Acoustic Level	<45 dBA	<60 dBA	
Heat Dissipation	<75 Btu/h	<350 Btu/h	
Ambient Temperature for Operation	Up to 40 °C	Up to 40 °C	
Degree Of Protection	IP20	Indicate	
Communication and Management			
Alarm	Audible & visible alarms	Audible & visible alarms	
Control Panel	Control Panel Multifunction LCD status and control console	Multifunction LCD status and control console, LED status display with on line : on battery : replace battery and overload indicators	
Emergency Power Off	Yes	Yes	

Communication Port Support	SmartConnect Ethernet port	Network management card 3 with environmental monitoring.	
Alarm	Alarm when on battery : distinctive low battery alarm.	Alarm when on battery : distinctive low battery alarm : configurable delays.	
Surge Protection and Filtering			
Surge Energy Rate	680 J	320 J	
Noise Suppression	Full time multi-pole noise filtering : 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449	Indicate	
Warranty			
Warranty Period	1year	1 year.	
Protection	Output overload protection (May be implemented external to UPS if not inbuilt)		
	Output short circuit (May be implemented external to UPS if not inbuilt)		
	Battery deep discharge protection (Discharge voltage per 12V battery $\geq 11.1Vdc$)		

Poles used to mount the outdoor access points shall be not less than 3inch in diameter, 4meters high, be made of galvanized iron (GI) and earthed using appropriate lightning arrestor with proper grounding via a duly sized copper earth rod as illustrated in the photo below.



During the mandatory site visit, the bidders shall carry out a detailed survey and establish whether any other additional materials shall be required to fully execute the works. In event any bidder determines that additional materials shall be required, the bidder shall include and cost them in the price schedule.

The successful bidder shall also facilitate and pay for Technical training- Sophos XG Firewall Administrator for 5 staff for 5days at an accredited Local training center.

The successful bidder(s) shall share details of the course outline for evaluation and approval by KenGen prior to the training.

4.Site Location

The two housing estates are located within the Olkaria Geothermal area, adjacent to Geothermal Plaza building approximately 24 Kms from Naivasha Town along Moi South Lake off Mai Mahiu- Naivasha road.

5. Hand-Over documentation

Prior to final acceptance, the contractor shall provide two (2) hard copies of "As-Built" documents. The document shall include at the minimum-detailed design, cable route, locations of any splice boxes, termination details and OTDR test results for all the optical fiber cores.

6.Warranty

(i) The warranty period shall be one year from the date of system acceptance for the installation. In case of failure of any part of the installation, the contractor shall supply any required labour, materials, and technical services to correct the failure/fault at no extra cost to KenGen.

(ii) All goods/materials supplied under this contract shall be guaranteed against defect in design, material, and workmanship or from any act or omission of the contractor for the full warranty period.

7. System Commissioning and Acceptance Tests

Commissioning and acceptance tests shall be necessary to confirm/verify that the installations meet the expected operational and quality requirements.

The successful bidder shall carry out OTDR tests on all cores of installed optical fiber cables and ensure that optical fiber transmissions losses across all the cores are within acceptable limits to ensure performance of all the cores. The contractor shall take the necessary corrective measures to improve condition of any core that may fail the test.

SUPPLIER ACKNOWLEDGEMENT OF ADDENDUM NO.1

We, the undersigned hereby certify that the Addendum No.1 is an integral part of the document and the alterations set out in addendum has been incorporated in the Tender Proposal.

Signed.....

Tenderer.....

Date.....