

Our Ref: KETRACO/ PT/027/2025

09th October 2025

Notice to all Bidders.

TENDER ADDENDUM AND CLARIFICATION No. 5 (TAC5)

RE: EPC Tender for Extension of Existing Kabarnet and Rumuruti 132/33kV Substations


IFB OCBI No: KETRACO/PT/027/2025

The following amendments are made to the specified provisions for the bidding documents for EPC Construction for the Design, Supply, and Installation Services for Extension of Existing 132/33 kV Kabarnet & Rumuruti substations (IFB OCBI No: KETRACO/PT/027/2025).

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

Find herein the ADDENDUM and CLARIFICATION No. 5, consisting of Seventy (71) pages into the Principal Tender Documents as attached. This document should be returned along with dully filled Form of Tender.

All other terms and conditions of the Request for Proposal document remains the same.



JANE VULIGWA

SENIOR MANAGER, SUPPLY CHAIN

Tender Addendum and Clarification No. 1 of IFB OCBI No: KETRACO/PT/027/2025 has been received and incorporated in the Tender Documents.

Name of Tenderer (in block letters):	
Signature:	
Date:	
Signed for the Tenderer by (Name in block letters):	
In the office bearer capacity of:	

A. Addendum no. 5

1. Section VI. Employer's Requirements- D – Drawings.

Please find the below revised drawings enclosed with this Tender Addendum No.5

- KABARNET-OVERALL LAYOUT -003-REV 03

2. BOQ- Price Schedules

The Price schedules have been revised. Refer to attached revised Price schedules for Section IV-Price Schedules-Kabarnet 132-33kV SS_Rev 02 & Section IV-Price Schedules-Rumuruti 132-33kV SS_Rev 02. Bidders are required to fill in the new Price Schedules as these reflect all the changes made by the Employer in line with the Tender Addendum No.4 and Clarification.

3. Section VI. Employer's Requirements- E – Schedules of Technical Information

Please find revised TDS for 33kV CONDUCTOR & 33kV INSULATOR enclosed with Tender Addendum No.4.

4. Section VI. Employer's Requirements- E – Schedules of Technical Information

E -TECHNICAL DATA SCHEDULES, 23MVA, 132/33kV POWER TRANSFORMER (AIS-AIS) is revised and enclosed with this TAC-5

5. Section VI. Employer's Requirements- E – Schedules of Technical Information

E -TECHNICAL DATA SCHEDULES, 4. 33/0.415kV AUXILIARY TRANSFORMER is revised and enclosed with

this TAC-5.

6. Section VI. Employer's Requirements- E – Schedules of Technical Information

E -TECHNICAL DATA SCHEDULES, 132kV INSULATOR TDS is revised and enclosed with this TAC-5.

7. Section VI. Employer's Requirements- E – Schedules of Technical Information

E -TECHNICAL DATA SCHEDULES, 19. TDS CCTV is revised and enclosed with this TAC-5.

8. Section VII. Employer's Requirements- B - Specifications ,1. GENERAL , 1.1 Scope of Work for regional office is revised and enclosed with this TAC-5.

9. Section VII. Employer's Requirements- B – Specifications, 1. General Technical Requirements, 1.1 General, Paragraph 4 is revised as below,

"Type test certificates/ type test reports are subject to the approval of Employer/ Engineer. Type-test certificates/type test reports shall not be older than Ten (10) years at the time of their submittal. Compilation of type test certificates/ type test reports shall be covered by a table of contents, clearly structured by equipment designation, the relevant standards, their sub clauses and designation of the relevant test."

10. Section VI. Employer's Requirements- D – Drawings.

Please find the below revised drawings enclosed with this Tender Addendum No.5

- CHAIN-LINK FENCE CLF-001 REV.01, wherein the steel poles have been changed to concrete poles.

11. The ITB 7.1, ITB 23.1 and ITB 26.1 of Section II Bid Data Sheet has been amended as follows:-

ITB 7.1	<p>For Clarification of Bid purposes only, the Employer's address is: Attention: Senior Manager, Supply Chain Address: Kenya Electricity Transmission Company Limited (KETRACO), KAWI Complex, Block B, Popo Road, off Red Cross Road, South C, Floor/Room number: 2nd Floor City: Nairobi ZIP Code: 00100 Country: Kenya Telephone: +254 719 018000 Electronic mail address: ktrnip@ketraco.co.ke Requests for clarification should be received by the Employer no later than : <i>21 (Twenty One) days.</i> Web page: www.ketraco.co.ke/procurement/tenders/open-tenders</p>
ITB 23.1	<p>For <u>Bid submission purposes</u> only, the Employer's address is: Attention: <i>Senior Manager, Supply Chain</i> Address: <i>Kenya Electricity Transmission Company Limited (KETRACO), KAWI Complex, Block B, Popo Road, off Red Cross Road, South C,</i> Floor/Room number: <i>2nd Floor</i> City: <i>Nairobi</i> ZIP Code: <i>00100</i> Country: <i>Kenya</i> The deadline for Bid submission is: Date: <i>21st October 2025</i> Time: <i>10:00 am EAT (East African Time)</i> Bidders <i>shall not</i> have the option of submitting their Bids electronically.</p>
ITB 26.1	<p>The Bid opening shall take place at: Address: <i>Kenya Electricity Transmission Company Limited (KETRACO), KAWI Complex, Block B, Popo Road, off Red Cross Road, South C,</i> Floor/Room number: <i>2nd Floor</i> City: <i>Nairobi</i> Country: <i>Kenya</i> Date: <i>21st October 2025</i> Time: <i>11:00 am EAT (East African Time)</i></p>

Tender Addendum Clarification No:5

Item No	Reference	Subject	Bidder's Specific Query	KETRACO Response
1	Section VIII - General Conditions of Contract	Clause 31 of General Conditions of Contract (GCC)	As per clause 31 of GCC,' Ownership of the Plant (including spare parts) to be imported into the country where the Site is located shall be transferred to the Employer upon loading on to the mode of transport to be used to convey the Plant from the country of origin to that country.' Thus we understand that the employer is the importer of plants supplied from abroad specified in Schedule 1 in Kenya. Please confirm whether our understanding is correct.	Employer shall be the consignee of the goods. The sellers and buyers obligation shall be as per Incoterms 2020.
2	Section VIII - General Conditions of Contract Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties and Clause 14 of GCC	As per clause 14.1 of GCC,' Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Facilities in and outside of the country where the Site is located.' We understand that prices specified in Schedule 4 INSTALLATION AND OTHER SERVICES are to be quoted inclusive of VAT. Please confirm our understanding.	Please refer to PCC 14 Taxes and Duties, which implies: a) Taxes, Levies and Duties in Kenya Tax exemptions will be applicable on all taxable goods and services imported or purchased locally for the exclusive and direct use in execution of projects. In this regard, exemptions shall be applicable per the tax laws of the Republic of Kenya. Exemptions are applicable for VAT as provided for under the First Schedule to the VAT Act. Others include exemptions from

				<p>Railway Development Levy (RDL), Import Duty, Excise Duty, and Import Declaration Form (IDF) Fees.</p> <p>The employer will facilitate the exemption based on the application and Master List provided by the Contractor and reviewed by the Employer / Employer's representative.</p> <p>b) Withholding Tax</p> <p>The Contractor and their subcontractors (if any) shall be liable for payment of withholding tax as applicable in Kenya. Nothing in this clause shall prevent the Employer from withholding any taxes that the Employer is required under the laws of the Republic of Kenya to withhold. Where payments for the contract price are made directly to the Contractor, the Contractor shall make the necessary arrangements with the Employer to ensure that withholding</p>
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				<p>tax is remitted to the Kenya Revenue Authority in accordance with Treasury Circular No.15/2019 dated 11th December,2019.</p> <p>c) Other Income Taxes</p> <p>All income received by the Contractor or their experts or other third party engaged by the contractor in connection with the Project and derived from the proceeds of the Loan, shall be subject to income tax in accordance with the applicable tax laws of the Republic of Kenya.</p> <p>The Contractor's employees shall be liable to pay such tax (es) that may be chargeable and applicable therein under the laws of Kenya and that may, for the time being, be in force in Kenya and the Contractor shall perform such duties.</p> <p>d) Import Duties and Taxes for</p>
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				<p>Contractor's Equipment and Machinery</p> <p>For Contractor's equipment and machinery imported on temporary basis for the execution of the contract, the contractor is liable for payment of duties/taxes on importation, however the Contractor in collaboration with the Employer will request temporary importation approval from Kenya Revenue Authority whereby the duties/taxes will not be paid if the imported materials are re-exported within the granted allowed period.</p> <p>The Contractor will be liable for payment of taxes for consumable items and spare parts of its own machinery.</p> <p>On completion of the project, if the Contractor decides to dispose materials imported under the temporary regime, the</p>
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				<p>buyer will be required to settle the tax dues for the disposed materials.</p> <p>The Contractor/Subcontractor shall indemnify and hold Employer free from any liability on account of all taxes such as payroll taxes and corporate tax in connection with the provision of goods and services during execution of the project.</p>
3	Section IX - Particular Conditions of Contract	PCC clause 14	<p>As per PCC Clause 14.3 c-</p> <p>All income received by contractors/consultants/experts or other third party engaged by the borrower in connection with the Contract, from the proceeds of the loan under this agreement, shall be subject to income tax in accordance with applicable laws in Kenya.</p> <p>Please confirm the withholding rates applicable for Plants supplied from abroad as specified in Schedule 1 and designing services as specified in Schedule 3 provided by non resident companies in Kenya.</p>	<p>Please refer to the response for clarification no.2 of this TAC 5</p>

4	Section IX - Particular Conditions of Contract Section IV - Price Schedule	Price Schedule	<p>As per PCC Clause 14.3c-</p> <p>All income received by contractors/consultants/experts or other third party engaged by the borrower in connection with the Contract, from the proceeds of the loan under this agreement, shall be subject to income tax in accordance with applicable laws in Kenya.</p> <p>Please confirm the withholding rates applicable for Plants supplied from within Kenya as specified in Schedule 2 and installation services as specified in Schedule 4 provided by companies resident in Kenya</p>	Please refer to the response for clarification no.2 of this TAC 5
5	Section IX - Particular Conditions of Contract Section IV - Price Schedule	Price Schedule	<p>As per PCC Clause 14.3 c-</p> <p>All income received by contractors/consultants/experts or other third party engaged by the borrower in connection with the Contract, from the proceeds of the loan under this agreement, shall be subject to income tax in accordance with applicable laws in Kenya.</p> <p>We understand that 5% WHT will be deducted from payments towards Schedule 1 payments. Please confirm the same.</p>	Please refer to the response for clarification no.2 of this TAC 5
6	Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties	<p>As per Clause 14 of PCC- 'Tax exemptions will be applicable on all taxable goods and services imported or purchased locally for the exclusive and direct use in execution of project. In this regard, exemptions shall be applicable per the tax laws of the Republic of Kenya. Exemptions are applicable for VAT as provided for under the First Schedule to the VAT Act. Others include exemptions from Railway Development Levy (RDL), Import Duty, Excise Duty, and Import Declaration Form (IDF) Fees'.</p> <p>We understand that output VAT for Schedule 4 INSTALLATION AND OTHER SERVICES are exempt and prices are to be quoted exclusive of VAT for Schedule 4. Please confirm.</p>	Please refer to the response for clarification no.2 of this TAC 5

7	Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties	As per Clause 14 of PCC- 'Tax exemptions will be applicable on all taxable goods and services imported or purchased locally for the exclusive and direct use in execution of project. In this regard, exemptions shall be applicable per the tax laws of the Republic of Kenya. Exemptions are applicable for VAT as provided for under the First Schedule to the VAT Act. Others include exemptions from Railway Development Levy (RDL), Import Duty, Excise Duty, and Import Declaration Form (IDF) Fees'. We understand that output VAT for Plants supplied from within Kenya as specified in Schedule 2 are exempt and prices are to be quoted exclusive of VAT for Schedule 2. Please confirm.	Please refer to the response for clarification no.2 of this TAC 5
8	Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties	As per Clause 14 of PCC- 'Tax exemptions will be applicable on all taxable goods and services imported or purchased locally for the exclusive and direct use in execution of project. In this regard, exemptions shall be applicable per the tax laws of the Republic of Kenya. Exemptions are applicable for VAT as provided for under the First Schedule to the VAT Act. Others include exemptions from Railway Development Levy (RDL), Import Duty, Excise Duty, and Import Declaration Form (IDF) Fees'. We understand that input VAT incurred on imports for Plants supplied from abroad as specified in Schedule 1 and designing services as specified in Schedule 3 are exempt and prices are to be quoted exclusive of VAT for Schedule 1 and 3. Please confirm.	Please refer to the response for clarification no.2 of this TAC 5
9	Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties	As per Clause 14 of PCC- 'Tax exemptions will be applicable on all taxable goods and services imported or purchased locally for the exclusive and direct use in execution of project. In this regard, exemptions shall be applicable per the tax laws of the Republic of Kenya. Exemptions are applicable for VAT as provided for under the First Schedule to the VAT Act. Others include exemptions from Railway Development Levy (RDL), Import Duty, Excise Duty, and Import Declaration Form (IDF) Fees'. We understand that the entire project is exempt from VAT for	Please refer to the response for clarification no.2 of this TAC 5

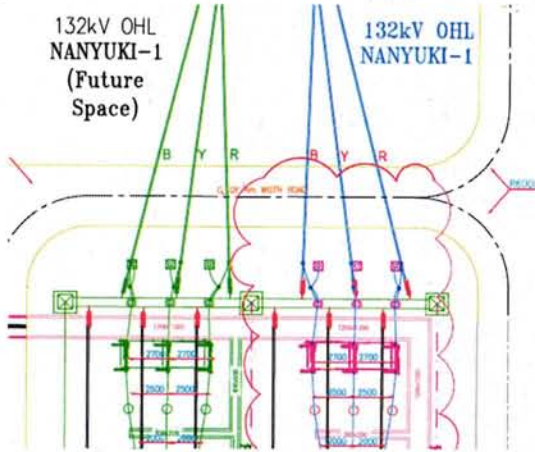
			all schedules and prices are to be quoted exclusive of VAT. Please confirm	
10	Section IX - Particular Conditions of Contract	Price Schedule	As per PCC Clause 14- All income received by contractors/consultants/experts or other third party engaged by the borrower in connection with the Contract, from the proceeds of the loan under this agreement, shall be subject to income tax in accordance with applicable laws in Kenya. Please confirm whether any withholding would be done for Plants supplied from abroad as specified in Schedule 1 provided by non resident companies in Kenya. If yes, at what rate.	Please refer to the response for clarification no.2 of this TAC 5
11	Existing Drawings	Cable Trench Details, Internal Road Details, Burnt Oil Pit Details, Internal & External Drainage Drawing	Details have not been issued. Kindly provide	Existing drawings are not available.
12	Specific Procurement Notice	Invitation for Bids for Plant Design, Supply and Installation	Please confirm whether we will be disbursed directly payment from African Development Bank (AfDB) or Korean Exim Bank (EDCF). to EPC contractor.	Confirmed
13	Specific Procurement Notice	Invitation for Bids for Plant Design, Supply and Installation	How much percent of contribution by each bank i.e. African Development Bank (AfDB) & Korean Exim Bank (EDCF)	Project will be jointly funded by AFDB and EDCF.
14	Section X - Contract Forms	Contract Agreement	Please confirm whether the payment will be irrevocable, confirmed documentary credit made available to the Contractor in a bank in the country of the Contractor or direct bank disbursement.	There will be no irrevocable confirmed documentary credit.
15	Section X - Contract Forms	Contract Agreement	If the payment will be irrevocable confirmed documentary credit, than confirm LC cost will be to your account.	Please refer to the response for clarification no.14 of this TAC 5
16	Section X - Contract Forms	Appendix 2. Terms and Procedures of Payment	We request you to please consider 30 days instead of 90 days for payment after receipt of invoice and the supporting documents. Please confirm.	Not Acceptable

17	Section IX - Particular Conditions of Contract	PCC clause 14- Taxes and Duties and Clause 14 of GCC	PCC Clause 14.3, we understand that VAT is exempted on Price Schedules 1, 2, 3 & 4. Please confirm our understanding.	Please refer to the response for clarification no.2 of this TAC 5
18	Section VIII - General Conditions of Contract	GCC clause 14- Taxes and Duties	GCC Clause 14.2, all customs and import duties for the Plant specified in Price Schedule No. 1; and other domestic taxes such as, sales tax and value added tax (VAT) on the Plant specified in Price Schedules No. 1 and No. 2 shall be borne by the employer. Please confirm our understanding.	Please refer to the response for clarification no.2 of this TAC 5
19	Section I - Instructions to Bidders	ITB 20. Bid Security	Please confirm that bid security in the form of an unconditional guarantee issued by a bank from an eligible country i.e. from India on the bank letter head is acceptable. No swift or counter guarantee is to be provided. Please confirm understanding is correct.	Confirmed
20	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors1. 132kV switchyard equipment2. 33kV switchyard equipment3. Power Transformers for 132/33 kV substations4. Control and protection system (CRP) 5. Substation and Automation systems, and communication systems (SASCS)6. Diesel Generator, Low Voltage Systems (DGLVS)7. Auxiliary transformer 8. Towers, gantries and structures9. Conductors 10. Insulator and fittings	Equipment's being in successful operation for at least 10 years. We request you to please accept 3 years successful operation as most of the manufacturers has not taken certificates even though their equipment's are operational. This also increase competition and can get competitive prices.	Follow the requirements as per Part 1 & 3 of the Bid Document.
21	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors 1. 132kV switchyard equipment 2. 33kV switchyard equipment 3. Power Transformers for 132/33 kV substations 4. Control and protection system (CRP) 5. Substation and Automation systems, and communication systems (SASCS) 6. Diesel Generator, Low Voltage Systems (DGLVS) 7. Auxiliary transformer	The operational experience shall be supported by end-user certificates from at least five (5) utilities/clients with comprehensive contact details. We understand that certificates from clients (EPC contractors & not end client) is acceptable. Please confirm.	Confirmed. Certificates from contractors are also acceptable.
22	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors 1. 132kV switchyard equipment	Please confirm that 110 kV, 115 kV Class equipment's are also acceptable.	Not Confirmed. Follow the bid requirement section II evaluation and

				qualification criteria clause 3.4 subcontractors
23	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors 1. 132kV switchyard equipment	<p>2) 132kV Switchyard equipment being in successful operation for at least 10 years exclude substation service voltage transformers (SSVT) to 5 years. The operational experience shall be supported by end-user certificates from at least five (5) utilities/clients with comprehensive contact details.</p> <p>3) Supply of 132kV switchyard equipment to at least five (5) project sites of which shall be outside the manufacturers home country.</p> <p>We understand that you will accept 132kV or above of switchyard equipment for above 2 conditions.</p>	Confirmed.
24	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors 2. 33kV switchyard equipment	<p>2) 33kV Switchyard equipment being in successful operation for at least 10 years. The operational experience shall be supported by end-user certificates from at least five (5) utilities/clients with comprehensive contact details.</p> <p>3) Supply of 33kV switchyard equipment to at least five (5) project sites of which shall be outside the manufacturers home country.</p> <p>We understand that you will accept 132kV or above of switchyard equipment for above 2 conditions.</p>	Confirmed.
25	Section III: Evaluation and Qualification Criteria	3.4 Subcontractors 2. Power Transformers for 132/33 kV substations	<p>2) Power Transformers being in successful operation for at least 10 years. The operational experience shall be supported by end-user certificates from at least five (5) utilities/clients with comprehensive contact details.</p> <p>3) Supply of 132/33 kV Power Transformers to at least five (5) project sites of which shall be outside the manufacturers home country.</p> <p>We understand that you will accept power transformers rated 132/33kV and above. for above 2 conditions.</p>	Confirmed.

26	Section VII. Employer's Requirements- B - Specifications	3.2 Circuit Breakers and Operating Mechanisms, 3.2.9 References	The Manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of thirty (30) years. A list of references with similar equipment shall be provided to demonstrate compliance with this requirement. However in Section III: Evaluation and Qualification Criteria, the same is asked for 15 Years. Request you to confirm Section III: Evaluation and Qualification Criteria i.e. 15 years manufacturing experience will be applicable.	Please follow the requirement in Section III: Evaluation and Qualification Criteria i.e. 15 years.
27	Section VII. Employer's Requirements- B - Specifications	3.2 Circuit Breakers and Operating Mechanisms, 3.2.9 References	Similarly for all other switchyard equipment (Disconnecter, Surge Arrester, Instrument Transformer, etc) Section III: Evaluation and Qualification Criteria i.e. 15 years manufacturing experience will be applicable.	Confirmed.
28	Section II – Bid Data Sheet (BDS)	ITB 2.1	As per ITB clause 2.1 of BDS, it is mentioned that "The Specific Bank financing institution is: African Development Bank (AfDB) and Korean Exim Bank (EDCF)". Kindly provide % Contribution of Financing if financed by both the banks.	This is not required at bidding stage.
29	General	Mode of Payment	We understand that the mode of Payment shall be Direct Bank Transfer from AFDB / EDCF to Bidder's account. Please confirm.	Confirmed.
30	Section X - Contract Forms	Contract Agreement	Please confirm Payment cycle for raising of invoices.	This is not required at bidding stage.
31	Section III: Evaluation and Qualification Criteria	3.2 Contractor's Representative and other Key Personnel	The requirements for Key Personnel state that the contractor's engineers, who shall form part of the key personnel, must be registered as Professional Engineers with the Engineers Board of Kenya. kindly clarify: Is it acceptable for our engineers to obtain registration as Professional Engineers with the Engineers Board of Kenya after contract award?	Refer to the Item No.40 of TAC 3.
32	Section VII. Employer's Requirements- B - Specifications	20.5 Earthing System	Kindly provide the existing earth mat spacing and size & type of material used for Kabarnet & Rumuruti Substations. And confirm below points 1. Earth mat is available for substation and requirement under present scope is only layout marked area for new bays.	Existing Earth mat drawing's not available. Earth mats available for the existing substation. Earth mats shall be extended to cover the new scope, covering the warehouse and the fence.

33	Section VII. Employer's Requirements- B - Specifications	battery room for Kabarnet & Rumuruti Substation	Please confirm that battery room have enough space available to accommodate new battery bank and new battery bank can be integrated with existing battery bank. Kindly provide the battery rack system drawing for better configuration of battery bank.	Yes, Adequate space is available for the battery charger & Bank. Refer to item No 3 under addendum 3 of TAC 3 for the integration with the existing battery system Battery rack system drawing not available.
34	Section VII. Employer's Requirements- B - Specifications	10.LV Service Equipment	Please confirm that AC/DC room have enough space available to accommodate new panels if required.	Confirmed.
35	Section VII. Employer's Requirements- B - Specifications	10.LV Service Equipment	Please confirm the below point for existing main ACDB. 1. Spare feeder availability 2. Extension of ACDB required or not	Please refer to Item No.3 of TAC 2.
36	Section VII. Employer's Requirements- B - Specifications	10.LV Service Equipment	Please confirm the below point for existing main DCDB. 1. Spare feeder availability 2. Extension of DCDB required or not	Please refer to Item No.3 of TAC 3.


37	Plan Layout	RUMURUTI -SP(OVERALL) -002	<p>As shown below, Nanyuki -1 line bay is under present scope and its gantry tower & girder are to be supplied. Future towers & girder are not be considered for supply. Please confirm</p> 	Confirmed. Future towers & girder are not to be supplied.
38	SLD	KABARNET-SLD-132kV- -002	<p>As per SLD and Price schedule requirement, one 132/33kV transformer bay has 5 cores CT and 2nd 132/33kV bay has 6 cores CT. Please confirm our understanding.</p>	Confirmed.
39	PSLD	KABARNET132/33kV -Trafo- PSLD - 003	<p>As per PSLD, for 132/33kV transformer protection, there is no 64R protection shown. Kindly clarify the requirement.</p>	Refer and follow the PSLD Where 87NT is provided for.
40	Price Schedule	Item no 2.1	<p>As per price schedule short circuit current rating for 33kV CB given is 31.5 kA but in the GTP given is 25kA for 1 sec. We understand that 33kV CB short circuit current rating will be 25kA for 1 sec.</p>	Refer to the Item 9 of TAC 3.
41	Plan Layout	Kabarnet & Rumuruti Substation	<p>Please confirm that existing main trench has enough space available to accommodate to LT cables required present scope.</p>	Main trench up to the control room shall be constructed by the contractor. Refer to the layout of Kabarnet and Rumuruti substations


42	Section VII. Employer's Requirements- B - Specifications	Type & Special Test: 3.4, 3.4.10, 3.4.11, 4.13, 5.14, 6.11, 13.7.4, 13.7.5	Please note that the durations of the project is 18 Months, hence it is very difficult to conduct the type tests on the equipment's due to constraints of Lab availability, transportation etc. We request you to please accept similar type tests reports for the same.	Identical type tests reports from an internationally accredited independent testing laboratory not associated with the manufacturers and not older than Ten (10) years shall be acceptable. Refer to the Item no.9 of Addendum 5 of this TAC-5.
43	Section VII. Employer's Requirements- B - Specifications	1. General Technical Requirements	Upon submission of relevant type test certificates and proof that the equipment and material to be tested is identical to that covered by the test certificates, the Employer/ Engineer may waive the requirements for corresponding type tests called for in this Specification and/ or specified in the Standards. We request you to please accept similar type test reports of the proposed equipment's.	Refer to the response for the Item 42 above.
44	Section VII. Employer's Requirements- B - Specifications	1. General Technical Requirements	Type test certificates/ type test reports are subject to the approval of Employer/ Engineer. Type-test certificates/ type test reports shall not be older than five (5) years at the time of their submittal. We request you to please accept Type-test certificates/ type test reports shall not be older than fifteen (15) years at the time of their submittal.	Refer to the Item no.9 of Addendum 5 of this TAC-5.

45	Section VII. Employer's Requirements- B - Specifications	3.2.12 Operating Conditions	<p>145kV Circuit breaker having electrical endurance class E1 instead of E2. As per IEC 62271-100, Page 63, Clause 4.111, the E2 class requirement is applicable to circuit breakers up to 52kV. (screenshot of the relevant section is attached for your reference). Request you to please accept electrical endurance class E1 for 145 kV Circuit Breaker.</p> <p>4.111 Classification of circuit-breakers as a function of electrical endurance</p> <p>Circuit-breakers required to have an electrical endurance capability, intended for auto-reclosing duty, as usual for overhead line networks, and of rated voltages up to and including 52 kV, are classified class E2 as defined in 3.4.113 and tested to 6.112.2 and Table 33.</p> <p>Circuit-breakers required to have an electrical endurance ability, but intended for use without auto-reclosing duty capability, for example in cable-connected networks, and of rated voltages up to and including 52 kV, are classified class E2 as defined in 3.4.113 and tested to 6.112.1.</p> <p>Class E2 is termed extended electrical endurance.</p> <p>Circuit-breakers not requiring this electrical endurance capability are classified class E1 as defined in 3.4.112, termed basic electrical endurance.</p>	Not acceptable. Follow Section VII, Employer's Requirements- B – Specifications, clause 3.2.12 Operating Conditions
46	Section VII. Employer's Requirements- B - Specifications	E -TECHNICAL DATA SCHEDULES, 132KV ISOLATOR	OEM's are offering Mechanical Endurance Class M1 instead of M2 and Electrical Endurance Class E0 instead of E2. Request you to please accept the same.	Not acceptable.
47	Section VII. Employer's Requirements- B - Specifications	132 kV Capacitance Voltage Transformer.	Please confirm Capacitance value of 132 kV Capacitance Voltage Transformer.	Refer the technical Datasheet for Available ranges of high voltage capacitor. Coupling capacitor to be filled by the bidder
48	Substation Coordinates- Employer's Requirements 1.2.1 Existing Kabarnet 132/33kV Substation	Kabarnet Substation	The coordinates provided in the tender documents do not align with the location of the existing substation. Since this is an extension of the existing substation, kindly provide the correct coordinates for the existing substation and its proposed extension area.	Please refer to the response for Item No 13 of TAC-2

49	Soil Investigation Report	Kabarnet Substation	We request you to provide the Geotechnical Soil Investigation report for the existing substation area.	Geotechnical Soil Investigation report not available.
50	Topography Survey report	Kabarnet Substation	We request you to please provide the topographic survey report for the complete plot area, along with contour drawings for the ground elevation levels.	Topographic survey report not available.
51	Employer's Requirements - Civil Works 16.5 Standard Specifications	Kabarnet Substation	We understand that the BS EN Code can be used for the design of concrete and steel.	Confirmed.
52	Finished Ground level	Kabarnet Substation	Please provide Finished Ground level of the Existing substation.	This shall be provided during detailed design.
53	Scope of Supply - Plot Development	Kabarnet Substation	We understand that the scope of work involves only site clearing within the specified corner coordinates of the plot. No land development activities like levelling, compaction are required across the entire plot area. Kindly confirm.	Refer and follow the Scope of works.
54	Scope of Supply - Plot Development	Kabarnet Substation	We understand that the development, including terracing, levelling, and compaction, will be carried out within the Substation area. The remaining portion of the plot will retain its existing natural ground profile. Kindly confirm if our understanding is correct.	Refer and follow the Scope of works.
55	Scope of Supply - Plot Development	Kabarnet Substation	Kindly confirm whether the existing substation is at one level or multi-level. Also, please confirm whether we can go for multi-level in substation extension area.	Bidders were taken to respective sites. One level or multi-level for the extension area shall be decided during the detailed design stage.

56	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Kabarnet Substation	We understand that all Substation internal roads are Asphalt roads. Kindly confirm.	Internal access roads to be matched with the existing road standards.
57	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Kabarnet Substation	We understand that all external access road connecting the substation with main public road will be Asphalt road. Kindly confirm.	Confirmed.
58	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Kabarnet Substation	We request you to please confirm the route of the access road from main road to Substation gate entry.	Bidders shall conduct their own due diligence.
59	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Kabarnet Substation	We request you to please provide access road length from main road to substation entry.	Bidders shall conduct their own due diligence.
60	Employer's Requirements - Civil Works 16.10.10.3 Car Parks	Kabarnet Substation	As per mentioned Clause car parking shall be provided with a shed for 10 number of cars, However as per Tender Layout Drawing it is for 6 number of cars. Kindly confirm number of car parking.	Car parking work is not required under the current work scope of Kabarnet Substation
61	Employer's Requirements - Civil Works 16.10.10.3 Car Parks	Kabarnet Substation	We kindly request you to provide the typical drawings of the car parking for the substation area.	Car parking work is not required under the current work scope of Kabarnet Substation
62	Employer's Requirements - Civil Works 16.10.9 Drainage	Kabarnet Substation	We kindly request you to provide the typical layout and cross-section drawings of the existing drainage system for the substation area.	As built drawings shall be provided to the successful bidder.
63	Employer's Requirements - Civil	Kabarnet Substation	We understand that stone masonry drains with steel grating can be provided on both	Refer to the Part 2, Employer's Requirements. However,

	Works 16.10.9 Drainage		sides of the Substation internal road. Kindly confirm.	detailed design shall be done during execution phase.
64	Employer's Requirements - Civil Works 16.10.9 Drainage	Kabarnet Substation	We understand that stone masonry drains with steel grating can be provided along the boundaries of the buildings. Kindly confirm.	Refer to the Part 2, Employer's Requirements. However, detailed design shall be done during execution phase.
65	Employer's Requirements - Civil Works 16.10.9 Drainage	Kabarnet Substation	We understand that stone masonry drains with steel grating can be provided along the perimeter of the fence. Kindly confirm.	Refer to the Part 2, Employer's Requirements. However, detailed design shall be done during execution phase.
66	Employer's Requirements - Civil Works 16.10.9 Drainage	Kabarnet Substation	We understand that stone masonry drains with steel grating can be provided on both sides of the External Access road. Kindly confirm.	Refer to the Part 2, Employer's Requirements. However, detailed design shall be done during execution phase.
67	Employer's Requirements - Civil Works 16.10.9 Drainage	Kabarnet Substation	We understand that the discharge point of the drainage is at the adjoining plot boundary. Kindly confirm.	This shall be finalized during the detailed design.
68	Employer's Requirements - Civil Works 16.10.10.5 Fencing and Gates	Kabarnet Substation	 <p>Kabarnet 132/33kV SS Water is demonstrated for urban grid</p> <p>We understand that a 3m high Chain Link Wire Mesh Fence with steel posts will be</p>	There is an existing fence covering the boundary.

			provided around the plot boundary.(Blue line K1-K10) Kindly confirm.	
69	Employer's Requirements - Civil Works 16.10.10.5 Fencing and Gates	Kabarnet Substation	 <p>We understand that a 2m high Chain Link Wire Mesh Fence with steel posts will be provided around the Switchyard. Kindly confirm.</p>	<p>Refer to Drawing KABARNET-OVERALL-002 & Refer & follow the Item 16.10.10.5 Fencing and Gates of Part 2 Employer's Requirement.</p> <p>Also refer to the Item No.10 of Addendum 5 of this TAC-5 for the change in the material type of the fencing poles.</p>
70	Cable trench & Cable duct	Kabarnet Substation	We kindly request you to provide the layout and typical section drawings for the cable trench and cable duct.	Cable trench & duct drawings not available.
71	Type of Foundation for equipment, Gantry tower, Building, Transformer. Etc.	Kabarnet Substation	We understand that all foundations in the substation are isolated pad foundations, and there is no requirement for piling. Kindly confirm	Bidder shall carry out their own due diligence.
72	Support Structure Type	Kabarnet Substation	We understand that all support structures of Equipment and Gantry in the substation are of the lattice type. Kindly confirm.	The 132kV Equipment Support structures are of lattice type & 33kV shall follow the existing arrangement.
73	Gantry - Beam Structure Type	Kabarnet Substation	We understand that all gantry beams in the substation are of the lattice type. Kindly confirm.	The 132kV gantry beams are of lattice type & 33kV shall follow the existing arrangement.

74	Basement in Control building	Kabarnet Substation	We understand that there is no requirement of basement in control building extension.	The extension of the Control room building shall exactly match with the existing.
75	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Kabarnet Substation	We understand that the Control Building is a single-story structure. Kindly confirm.	Confirmed.
76	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Kabarnet Substation	We understand that the roof of the building will be RCC slab with steel sheet roofing. Please confirm.	Existing arrangement for Control room roof is with steel trusses which shall be followed for Control room extension.
77	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Kabarnet Substation	We kindly request you to provide the scope of extension work in Control Building. Also, the layout doesn't show extension of control room building. Please confirm requirement and space availability.	Please refer to the drawing KABARNET-OVERALL -003 REV.01 under Addendum Item 4 of TAC 3 .
78	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Kabarnet Substation	We kindly request you to provide clear conceptual and architectural drawings (elevation, section, etc.) with dimensions for the existing Control Building.	Existing Control room drawings not available.
79	Diesel Generator House Drawing	Kabarnet Substation	We request you to please confirm the location of Diesel Generator Building for Kabarnet Substation.	Refer to item 1 of Addendum 5 of this TAC-5 for the location of Diesel Generator
80	Diesel Generator House Drawing	Kabarnet Substation	We understand that it will be a single-storey building. Kindly confirm.	Confirmed.
81	Diesel Generator House Drawing	Kabarnet Substation	We understand that the roof of the Diesel Generator building will be an RCC slab with steel sheet roofing. Please confirm.	Roof shall be with steel trusses and IT5 roofing sheets.
82	Guard House for Substation	Kabarnet Substation	We understand that the Guard House for Substation is a Single storey building. Kindly confirm.	Confirmed.

83	Guard House for Substation	Kabarnet Substation	We understand that the roof of the Guard House building will be an RCC slab with steel sheet roofing. Please confirm.	Roof shall be with steel trusses and IT5 roofing sheets.
84	Guard House for Substation	Kabarnet Substation	We understand that existing guard house need to be completely demolished and new one is built. Please confirm.	Confirmed. Please refer to the Addendum Item 4 of TAC 3 and follow the drawings <ul style="list-style-type: none"> • KABARNET-DEMOLITION-003-REV 01 • KABARNET-OVERALL-003-REV 01
85	Fire Fighting Pump house	Kabarnet Substation	Please confirm the requirement of Fire Fighting Pump house.	Not required.
86	Fire Fighting Pump house	Kabarnet Substation	If Fire Fighting Pump house is required, 1) Please confirm that the Pump House is a single-story Building. 2) Please confirm the roof of the building will be RCC slab with steel sheet roofing. 3) We request you to kindly provide the location of Pump House.	Not required.
87	Employer's Requirements - Civil Works	Kabarnet Substation	According to the tender drawings and technical specifications provided, we understand that there is no requirement of Staff houses. Kindly confirm.	Confirmed.
88	Location of Septic Tank	Kabarnet Substation	We kindly request you to provide the location of the septic tank and soak pit.	Refer the drawing KABARNET-OVERALL - 003-REV 01
89	Drawing of Septic Tank	Kabarnet Substation	We kindly request you to provide the typical drawings of the existing septic tank and soak pit.	Septic Tank and Soak Pit is not required at Kabarnet Substation.
90	Capacity of Septic Tank	Kabarnet Substation	We kindly request you to provide the capacity & users of the septic tank and soak pit.	Septic Tank and Soak Pit is not required at Kabarnet Substation.

91	DRAWINGS - Typical	Kabarnet Substation	We understand that all building sizes provided are for reference; however, we can modify building sizes as per the actual design requirements. Kindly confirm.	Building sizes provided are the minimum requirement.
92	Slope Filling for protection of Substation embankment edges	Kabarnet Substation	1) 'We assume that slope filling can be done outside the plot boundary line for protection of the substation embankment edges. please confirm. 2) If slope filling is not permitted outside the plot boundary, please confirm whether slope filling can be done within the substation boundary.	This shall be finalized during detailed design.
93	Oil separator tank	Kabarnet Substation	We request you to provide the capacity and typical drawings of existing Oil separator tank.	Oil pit sizing shall be based on approved calculations by Employer or Employer's representative. Typical drawings not available for Oil Separator tank.
94	Oil separator tank	Kabarnet Substation	As per tender documents, we are not able to find any oil pit located in the substation. Please confirm.	Refer the drawing KABARNET-OVERALL - 003-REV 01 for the location of Oil pit.
95	Employer's Requirements - Civil Works	Kabarnet Substation	We request you to kindly confirm the grade of steel to be used.	Refer and follow Part 2 , Employer's requirements Item 16.5 Standard Specifications.
96	Substation Coordinates- Employer's Requirements 1.2.2 Existing Rumuruti 132/33kV Substation	Rumuruti Substation	The coordinates provided in the tender documents do not align with the location of the existing substation. Since this is an extension of the existing substation, kindly provide the correct coordinates for the existing substation and its proposed extension area.	Refer to Addendum Item No.8 of TAC 2.

97	Soil Investigation Report	Rumuruti Substation	We request you to provide the Geotechnical Soil Investigation report for the existing substation area.	Not available.
98	Topography Survey report	Rumuruti Substation	We request you to please provide the topographic survey report for the complete plot area, along with contour drawings for the ground elevation levels.	Not available.
99	Employer's Requirements - Civil Works 16.5 Standard Specifications	Rumuruti Substation	We understand that the BS EN Code can be used for the design of concrete and steel.	Refer and follow Part 2 , Employer's requirements Item 16.5 Standard Specifications.
100	Finished Ground level	Rumuruti Substation	Please provide Finished Ground level of the Existing substation.	Bidder shall carry out their own due diligence.
101	Scope of Supply - Plot Development	Rumuruti Substation	We understand that the scope of work involves only site clearing within the specified corner coordinates of the plot. No land development activities like levelling, compaction are required across the entire plot area. Kindly confirm.	Bidder shall refer to the scope of works.
102	Scope of Supply - Plot Development	Rumuruti Substation	We understand that the development, including terracing, levelling, and compaction, will be carried out within the Substation area, Staff housing area and other buildings area. The remaining portion of the plot will retain its existing natural ground profile. Kindly confirm if our understanding is correct.	Bidder shall refer to the scope of works.
103	Scope of Supply - Plot Development	Rumuruti Substation	Kindly confirm whether the existing substation is at one level or multi level. Also, please confirm whether we can go for multi-level in substation extension area.	The existing substation is at one level. For the substation extension area, this shall be finalized during detailed design.

104	Scope of Supply - Plot Development	Rumuruti Substation	Please confirm whether we can go for multi-level in staff house area.	Follow the requirement as in Part 2 Employers Requirements & Typical drawings.
105	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Rumuruti Substation	We understand that all Substation internal roads are Asphalt roads. Kindly confirm.	Bidder shall match with the existing road standards
106	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Rumuruti Substation	We understand that all external access road connecting the substation with main public road will be Asphalt road. Kindly confirm.	Confirmed.
107	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Rumuruti Substation	We request you to please confirm the route of the access road from main road to Substation gate entry.	Bidders were taken for Site visit and shall carry out their own due diligence.
108	Employer's Requirements - Civil Works 16.10.10 Permanent Access Roads	Rumuruti Substation	We request you to please provide access road length from main road to substation entry.	Bidder shall carry out their own due diligence.
109	Employer's Requirements - Civil Works 16.10.10.3 Car Parks	Rumuruti Substation	We understand that car parking shall be provided with a shed for 10 number of cars, Kindly confirm.	Confirmed.
110	Employer's Requirements - Civil Works 16.10.10.3 Car Parks	Rumuruti Substation	We kindly request you to provide the typical drawings of the car parking for the substation area.	Not available.
111	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We kindly request you to provide the typical layout and cross-section drawings of the existing drainage system for the substation area.	Not available.

112	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We understand that stone masonry drains with steel grating can be provided on both sides of the Substation internal road. Kindly confirm.	Refer to the Part 2, Employer's Requirements. However, detailed design shall be done during execution phase.
113	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We understand that stone masonry drains with steel grating can be provided along the boundaries of the buildings. Kindly confirm.	Refer to the Part 2, Employer's Requirements, Item 16.10.9 Drainage. However, detailed design shall be done during execution phase.
114	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We understand that stone masonry drains with steel grating can be provided along the perimeter of the fence. Kindly confirm.	Refer to the Part 2, Employer's Requirements, Item 16.10.9 Drainage. However, detailed design shall be done during execution phase.
115	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We understand that stone masonry drains with steel grating can be provided on both sides of the External Access road. Kindly confirm.	Refer to the Part 2, Employer's Requirements, Item 16.10.9 Drainage. However, detailed design shall be done during execution phase.

116	Employer's Requirements - Civil Works 16.10.9 Drainage	Rumuruti Substation	We understand that the discharge point of the drainage is at the adjoining plot boundary. Kindly confirm.	The location of discharge point of the discharge shall be finalized during the detailed design.
117	Employer's Requirements - Civil Works 16.10.10.5 Fencing and Gates	Rumuruti Substation	<p>We understand that a 3m high Chain Link Wire Mesh Fence with steel posts will be provided around the plot boundary.(Blue line K1-K10) Kindly confirm.</p>	There is an existing fence covering the whole boundary.

118	Employer's Requirements - Civil Works 16.10.10.5 Fencing and Gates	Rumuruti Substation	 <p>We understand that a 2m high Chain Link Wire Mesh Fence with steel posts will be provided around the Switchyard. Kindly confirm.</p>	Also refer to the Item No.10 of Addendum 5 of this TAC-5 for the change in the material type of the fencing poles.
119	Employer's Requirements - Civil Works 16.10.10.5 Fencing and Gates	Rumuruti Substation	We understand that a 2m high Chain Link Wire Mesh Fence with steel posts will be provided around the Housing areas. Kindly confirm.	Not confirmed. 3-Meter-high Chain Link fence shall be required.
120	Cable trench & Cable duct	Rumuruti Substation	We kindly request you to provide the layout and typical section drawings for the cable trench and cable duct.	Cable trench and cable duct drawings not available
121	Type of Foundation for equipment, Gantry tower, Building, Transformer. Etc.	Rumuruti Substation	We understand that all foundations in the substation are isolated pad foundations, and there is no requirement for piling. Kindly confirm	Confirmed.
122	Support Structure Type	Rumuruti Substation	We understand that all support structures of Equipment and Gantry in the substation are of the lattice type. Kindly confirm.	The 132kV Equipment Support structures are of lattice type & 33kV shall follow the existing arrangement.
123	Gantry - Beam Structure Type	Rumuruti Substation	We understand that all gantry beams in the substation are of the lattice type. Kindly confirm.	The 132kV gantry beams are of lattice type & 33kV shall follow the existing arrangement.

124	Basement in Control building	Rumuruti Substation	We understand that there is no requirement of basement in control building extension.	The extension of the Control room building shall exactly match with the existing.
125	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Rumuruti Substation	We understand that the Control Building is a single-story structure. Kindly confirm.	Confirmed.
126	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Rumuruti Substation	We understand that the roof of the building will be RCC slab with steel sheet roofing. Please confirm.	Existing arrangement for Control room roof is with steel trusses which shall be followed for Control room extension.
127	Employer's Requirements - Civil Works 16.4 Control Rooms (CRs)	Rumuruti Substation	We kindly request you to provide clear conceptual and architectural drawings (elevation, section, etc.) with dimensions for the existing Control Building.	Drawings for the existing Control Building shall be provided during the detailed design stage.
128	Diesel Generator House Drawing	Rumuruti Substation	We understand that it will be a single-storey building. Kindly confirm.	Confirmed.
129	Diesel Generator House Drawing	Rumuruti Substation	We understand that the roof of the Diesel Generator building will be an RCC slab with steel sheet roofing. Please confirm.	The roof of DG building is steel truss with IT5 roofing sheets.
130	Guard House for Substation	Rumuruti Substation	We understand that the Guard House for Substation is a Single storey building. Kindly confirm.	Confirmed.
131	Guard House for Substation	Rumuruti Substation	We understand that the roof of the Guard House building will be an RCC slab with steel sheet roofing. Please confirm.	This shall match with the existing arrangement which is steel truss and IT5 roofing sheets.
132	Guard House for Substation	Rumuruti Substation	We understand that existing guard house need to be completely demolished and new one is built. Please confirm.	Confirmed.

133	Guard House for Housing Area	Rumuruti Substation	We understand that the Guard House for Housing area is a Single storey building. Kindly confirm.	Confirmed.
134	Guard House for Housing Area	Rumuruti Substation	We understand that the roof of the Guard House building will be an RCC slab with steel sheet roofing. Please confirm.	The roof of Guard house building is steel truss with ITS roofing sheets.
135	Guard House for Housing Area	Rumuruti Substation	Architectural drawing provided in the tender documents is not matching with the layout provided. Please confirm the layout of Guard House for housing area.	<p>Please refer to the Addendum Item 4 of TAC 3 and follow the drawings</p> <ul style="list-style-type: none"> • RUMURUTI - GL(OVERALL)-003-REV 01 • RUMURUTI - DEMOLITION -002-REV 01 • RUMURUTI - SP(OVERALL) -003-REV 01 • RUMURUTI - SP(SCOPE)-003-REV 01 • RUMURUTI -GP-SCOPE-003-REV 01
136	Fire Fighting Pump house	Rumuruti Substation	<p>1) Please confirm that the Pump House is a single-story Building.</p> <p>2) Please confirm the roof of the building will be RCC slab with steel sheet roofing.</p>	<p>1. Confirmed.</p> <p>2. The roof of Fire Fighting Pump house is steel truss with ITS roofing sheets.</p>
137	Technical Requirements - Civil Works Technical staff Housing	Rumuruti Substation	We understand that the staff houses are single-storey Buildings. Please confirm.	Confirmed.

138	Technical Requirements - Civil Works Technical staff Housing	Rumuruti Substation	We understand that staff houses are duplex-type.	Confirmed.
139	Technical Requirements - Civil Works Technical staff Housing	Rumuruti Substation	We understand that roof of the duplex building will be an RCC slab with steel sheet roofing. Please confirm.	Not Confirmed. The Roofs shall be with steel trusses with IT5 roofing sheets..
140	Technical Requirements - Civil Works Security Staff housing	Rumuruti Substation	We understand that the staff houses are single-storey Buildings. Please confirm.	Confirmed.
141	Technical Requirements - Civil Works Security Staff housing	Rumuruti Substation	We understand that staff houses are duplex-type.	Confirmed.
142	Technical Requirements - Civil Works Security Staff housing	Rumuruti Substation	We understand that roof of the duplex building will be an RCC slab with steel sheet roofing. Please confirm.	The Roofs shall be with steel trusses with IT5 roofing sheets.
143	Drawing of Septic Tank	Rumuruti Substation	We kindly request you to provide the typical drawings of the existing septic tank and soak pit.	Typical drawing is not available. Please refer item 2 of Addendum 4 of TAC-5 for the material change in price schedule
144	Capacity of Septic Tank	Rumuruti Substation	We kindly request you to provide the capacity & users of the septic tank and soak pit.	Refer to the price schedule 4 item 13.9.1 and 13.9.2 under item 2 of Addendum 5 of TAC-5 User details shall be as below, 1. Control Building- 5 2. Guard House with Collocation room – 5 3. Regional Office- 20 4. Technical staff housing per duplex- 10 5. Security staff housing per duplex-6

145	DRAWINGS - Typical	Rumuruti Substation	We understand that all building sizes provided are for reference; however, we can modify building sizes as per the actual design requirements. Kindly confirm.	Building sizes shall be the minimum requirement.
146	Slope Filling for protection of Substation embankment edges	Rumuruti Substation	1) 'We assume that slope filling can be done outside the plot boundary line for protection of the substation embankment edges. please confirm. 2) If slope filling is not permitted outside the plot boundary, please confirm whether slope filling can be done within the substation boundary.	Shall be finalized during the detailed design stage
147	Oil separator tank	Rumuruti Substation	We request you to provide the capacity and typical drawings of existing Oil separator tank.	Oil pit sizing shall be based on approved calculations by Employer or Employer's representative. Typical drawings not available for Oil Separator tank.
148	Oil separators tank	Rumuruti Substation	As per tender documents, we are not able to find any oil pit located in the substation. Please confirm.	Oil pits indicated in the layout drawings.
149	Employer's Requirements - Civil Works	Rumuruti Substation	We request you to kindly confirm the grade of steel to be used.	Refer and follow Part 2 , Employer's requirements Item 16.5 Standard Specifications.
150	Rumuruti Layout and Sections	Fire Water Tank	As per layout and BPS, Please Clarify that Fire water Reservoir tank shall be Underground or Aboveground and also confirm that no. of reservoir tank shall be envisaged for this substation. We propose aboveground tank as Positive Suction pumping System is recommended for fire application. Please Confirm.	RC Monolithic cast Underground tank shall be considered. with total capacity of 50 m3 shall be considered. Refer to the Item 2 of Addendum 5 of TAC 5

				Item No 13.26.2 of Schedule_4_SS of Price Schedules-Rumuruti 132-33kV SS_Rev 02
151	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	In the absence of technical specification for Piping and Fitting, We are considering ASTM A53 Grade B Pipe for Fire Hydrant and Pumping System. Please confirm.	These shall be finalized during detailed design.
152	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We understand that Fire Rings main piping shall generally be laid aboveground, however at road /rail crossing and building/ Area entry points where Vehicle movement will be there, Piping shall be laid underground through Hume Pipe. Please Confirm.	Underground Hume pipe with concrete shall be required.
153	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_2_SS, 3 POWER TRANSFORMER	Power transformer three phase units HV132/LV33kV, 18-23MVA including HV/LV/Neutral Bushing CT's, OLTC, RTCC, Control Cabinet and all accessories as required acc. to Tech. Spec. and TDS	Since Power Transformer rating is below 100 MVA so we have considered We are considering 2 nos of 50 kg wheeled Dry-Powder Fire extinguisher for Auxiliary transformer and 1 nos of 50 kg wheeled Dry-Powder Fire extinguisher for Power transformer only for this substation.	Fire water protection shall be required. Also the fire extinguishers shall be in accordance with the requirements of NFPA 10, latest edition, and shall be installed at locations approved by the Employer/ Employers Representative.
154	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We have considered following Fire Fighting Systems only As per Scope Document 1. Fire Alarm and Detection System for substation Extended Control Room, Warehouse, Security Hosing Room, Technical Housing Room, DG Room, Pump House, Transformer, Guard House and Regional Office only 3. Fire Extinguisher for substation extended Control Room, Warehouse, Security Hosing	1. Confirmed. 3. Confirmed.

			<p>Room, Technical Housing Room, DG Room, Pump House, Transformer, Guard House and Regional Office, Switchyard area only.</p> <p>4. Fire Pumping system with following Pump House Equipments along with Piping, Fitting Valves & Other accessories:</p> <ul style="list-style-type: none"> a. 1 no. 500 GPM main motor driven pump b. 1 no. 500 GPM Diesel Engine driven pump c. 2 nos. 50 GPM Jockey pumps d. Air Vessel e. Pump Panel <p>5. Hydrant System</p> <p>Any other type of Fire Detection & Protection System is not considered under present scope. Please Confirm.</p>	4.Refer & follow the technical data schedules.
155	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	<p>As per Table given in referred clause, We understand that Following Fire Protection System is not under Present scope. Please confirm.</p> <ul style="list-style-type: none"> 1. Sprinkler system 2. Clean agent gas extinguishing systems 3. Standpipes & hose systems as there is not multi-story Building 4. Fixed water spray systems for Transformer as Nitrogen Injection Fire Protection System has been considered for Transformers. 5. Linear heat detection system as there is no Cable spreading room, Cable basements, Cable tunnels and Cable shafts envisaged for this tender. 	Refer & follow the Part 2 Employer's Requirements
156	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We assume that there is the Provision/windows in the Existing Fire detection and alarm cum Annunciation panel located in Control Building to take the Fire detection and alarm Signal coming in present	New Fire detection And alarm system shall be required.

			scope of work. So New FDA cum Annunciation panel at CRB is not required. Please confirm.	
157		General	We understand that Conventional type of Fire Detection and Alarm system shall be provided for this substation. Please Confirm.	Refer & follow the Part 2 Employer's Requirements
158	Schedule iV- Price Schedule 4A_SS	Quantity of Fire Extinguishers	We understand that, We have to supply Fire Extinguisher quantity as per Price schedule for Control Room, Security Housing Room, Technical Housing Room, Guard House and DG room. Any variation in quantity shall be paid extra.	Refer to the Price schedule quantities.
159	Part 2 Employer's Requirements, clause no. 1.3.1, h & Schedule iV- Price Schedule 4A_SS, Clause no. 13.27.3 - 13.27.10 ,& 13.32	Extension of control room building to accommodate additional panels	As per layout and Referred clause, Only extension of control room in Control building is envisaged however as per Price schedule, HVAC system and Firefighting system has considered for all the rooms present in Control building so please confirm whether both the system HVAC system and Fire fighting system shall be considered for all the rooms mentioned in BPS or shall be considered only for Control room extension.	Please refer to the Price schedule Item No13.27.3, 13.27.4 & 13.27.5 for the HVAC items for the control room . For fire fighting please refer to the Price schedule Item No.13.27.9 & 13.27.10
160	Part 2 Employer's Requirements, clause no. 1.3.1, h	construction of technical staff housing (4 units) and security housing (3 units) as per tender drawings	As per Referred clause, 3 units of Security Staff Housing is required however as per layout same is shown as 4 units. Please clarify which one to follow.	Security Housing shall be four (4) units.
161	Part 2 Employer's Requirements, clause no. 1.3.1, h	Extension of guard house to include collocation room	As per Referred clause, extension of guard house to include collocation room is required however as per tender layout new guard room is shown so please clarify the same so that HVAC system shall be considered accordingly.	Please refer to the Addendum Item 4 of TAC 3 and follow the drawings • RUMURUTI - GL(OVERALL)-003-REV 01

				<ul style="list-style-type: none"> • RUMURUTI - DEMOLITION -002-REV 01 • RUMURUTI - SP(OVERALL) -003-REV 01 • RUMURUTI - SP(SCOPE)-003-REV 01 • RUMURUTI -GP-SCOPE-003-REV 01
162	Section VII. Employer's Requirements Clause no. 16.11.2.2.5 HVAC Systems and Design Conditions	Central air conditioning systems with 2 x 100% air handling units and standby mechanical cooling.	There is discrepancy in Price Schedule & Technical Speciation, As per Price Schedule High Wall split AC shall be provided for Control Room However as per Technical Specification Central Air conditioning system is required. We understand that, we have to follow Price schedule only. Please confirm.	Split units shall be considered.
163		General	We understand that, We have to supply Split AC Units & Exhaust Fan quantity as per Price schedule for Extension of Control Room, Security Housing Room, Technical Housing Room, Guard House and DG Room. Any variation in quantity shall be paid extra. Please confirm.	Refer to the Price schedule quantities.
164	Schedule iV- Price Schedule 4A_SS, Clause no. 13.24.2	Complete Electric Overhead Travelling (EOT) Crane minimum five (5) tonnes	Please clarify that required EOT Crane for Warehouse shall be of single girder or double girder. And also confirm the capacity.	Double girder of five (5) tonnes shall be required.
165	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	Please clarify that new complete pumping system shall be consider for this substation or existing pumping system including tank is sufficient to take care the Hydrant system under present scope for this substation.	There is no fire water pump requirement at Kabarnet Substation.
166	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire	We assume that Existing Pumping Capacity, Pump head and water tank capacity is sufficient to take care of the Hydrant	There is no fire water pump requirement at Kabarnet Substation.

		pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	Firefighting system. Hence the Fire Pumping system or Booster Pumping System is totally excluded from Bidder scope of work. Please confirm.	
167	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We are considering tapping distance from existing header as 50 meters. Please provide the exact length of tapping distance & Size of header at the tapping location, for extension of Hydrant system.	There is no fire water pump requirement at Kabarnet Substation.
168	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	In the absence of technical specification for Piping and Fitting, We are considering ASTM A53 Grade B Pipe for Fire Hydrant System. Please confirm.	There is no fire water pump requirement at Kabarnet Substation.
169	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We understand that Fire Rings main piping shall generally be laid aboveground, however at road /rail crossing and building/ Area entry points where Vehicle movement will be there, Piping shall be laid underground through Hume Pipe. Please Confirm.	Hume pipe with concrete filling shall be required wherever applicable.
170	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_2_SS, 3.2.2 (POWER TRANSFORMER)	Power transformer three phase units HV132/LV33kV, 18-23MVA including HV/LV/Neutral Bushing CT's, OLTC, RTCC, Control Cabinet and all accessories as required acc. to Tech. Spec. and TDS	Since Power Transformer rating is below 100 MVA so we have considered We are considering 2 nos of 50 kg wheeled Dry-Powder Fire extinguisher for Auxiliary transformer and 1 nos of 50 kg wheeled Dry-Powder Fire extinguisher for Power transformer only for this substation.	The fire extinguishers shall be in accordance with the requirements of NFPA 10, latest edition, and shall be installed at locations approved by the Employer/ Employers Representative.
171	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We have considered following Fire Fighting Systems only As per Scope Document 1. Fire Alarm and Detection System for substation Extended Control Room, DG Room, Transformer and Guard House only 2. Fire Extinguisher for substation Extended Control Room, DG Room, Transformer and Guard House only.	Please refer and follow the bid requirement.

			<p>3. Hydrant System</p> <p>Any other type of Fire Detection & Protection System is not considered under present scope. Please Confirm.</p>	
172	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	<p>As per Table given in referred clause, We understand that Following Fire Protection System is not under Present scope. Please confirm.</p> <ol style="list-style-type: none"> 1. Pumping system 2. Sprinkler system 3. Clean agent gas extinguishing systems 4. Standpipes & hose systems as there is not multi-story Building 5. Fixed water spray systems for Transformer as Nitrogen Injection Fire Protection System has been considered for Transformers. 6. Linear heat detection system as there is no Cable spreading room, Cable basements, Cable tunnels and Cable shafts envisaged for this tender. 	It is Confirmed that water firefighting system is not required at Kabarnet Substation
173	Schedule iV- Price Schedule 4A_SS	Quantity of Fire Extinguishers	We understand that, We have to supply Fire Extinguisher quantity as per Price schedule for Extended Control Room, Extended Guard House and DG room. Any variation in quantity shall be paid extra.	Refer to the quantities mentioned in the prices schedule.
174	Part 2 Employer's Requirements, clause no. 1.3.2, h & Schedule iV- Price Schedule 4A_SS, Clause no. 13.27.3 - 13.27.10 ,& 13.32	Extension of control room building to accommodate additional panels	As per layout and Referred clause, Only extension of control room in Control building is envisaged however as per Price schedule, HVAC system and Firefighting system has considered for all the rooms present in Control building so please confirm whether both the system HVAC system and Fire fighting system shall be considered for all the	Refer and follow the price schedule requirements

			rooms mentioned in BPS or shall be considered only for Control room extension.	
175		General	We understand that Conventional type of Fire Detection and Alarm system shall be provided for this substation. Please Confirm.	Refer & follow the Part 2 Employer's requirements.
176	Part 2 Employer's Requirements, clause no. 17. Fire Fighting	Fire detection and alarm system, fire protection and firefighting system for Substation including water storage tanks, firefighting room with fire pumps and associated piping and valves, all pertaining equipment, external pipelines, hydrants and fire hose cabinets to cover entire site	We assume that there is the Provision/windows in the Existing Fire detection and alarm cum Annunciation panel located in Control Building to take the Fire detection and alarm Signal coming in present scope of work. So New FDA cum Annunciation panel at CRB is not required. Please confirm.	New Fire detection and Alarm system shall be required.
177		General	Please provide the following existing input drawings 1. Existing Fire Alarm & Detection System layout along & Schematic Diagram of fire Alarm Detection System 2. Indoor and outdoor cable trench layout dwg 3. Existing Fire System Panel GA and Schematic / SLD drawing.	These drawings are not available.
178		General	There is no any residential building under present scope of work for this substation so we have not considered any Fire fighting and Hvac system for the same. Please confirm.	There are no residential buildings at Kabarnet.
179	Part 2 Employer's Requirements, clause no. 1.3.1, h	Extension of guard house to include collocation room	As per Referred clause, extension of guard house to include collocation room is required however as per tender layout new guard room is shown so please clarify the same so that HVAC system shall be considered accordingly.	HVAC system shall be required for the guard house and collocation room. Refer to Item 4 of Addendum 3, TAC 3 for the revised layouts that shows the location of

				Guardhouse and telecom collocation room.
180	Section VII. Employer's Requirements Clause no. 16.11.2.2.5 HVAC Systems and Design Conditions	Central air conditioning systems with 2 x 100% air handling units and standby mechanical cooling.	There is discrepancy in Price Schedule & Technical Speciation, As per Price Schedule High Wall split AC shall be provided for Control Room However as per Technical Specification Central Air conditioning system is required. We understand that, we have to follow Price schedule only. Please confirm.	Split units shall be considered.
181		General	We are considering HVAC system quantity as per Price schedule for Extension of Control Room, extended Guard House and DG Room. Any variation in quantity shall be paid extra. Please confirm.	Please Refer to the revised price schedules under Item 2 of this Addendum. HVAC not required for DG room.
182	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_2_SS		As per scope of work, DG set is required in Kabarnet substation. But we can't able to any line item against same in price schedule.	Please Refer to the revised price schedules under Item 2 of this Addendum.
183	Section IV-Price Schedules-Rumuruti 132-33kV SS,		We understand that there is no requirement of SCH 6-Testing Equipments in rumuruti.	Not required
184	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_2_SS		We understand that there is no requirement of mobile crane in Kabarnet Substation.	Not required
185	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_2_SS		we understand that there is typo error in item no 15.5 of Price Schedules-Kabarnet instead of clause 20.1 it is 21. Please confirm.	Please Refer to the revised price schedules under Item 2 of this Addendum.

186	Section III - Evaluation and Qualification Criteria		<p>We respectfully request you to consider a relaxation in the Minimum Criteria to be met by Manufacturers for 132kV switchyard equipment as follows:</p> <p>Reduction in Required Operational Years Kindly consider accepting equipment with a minimum of 3 years (instead of 10 years). OR Reduction in Number of End-User Certificates Alternatively, we request acceptance of 1 to 2 end-user certificates (instead of 5).</p>	Follow the Bid requirements.
187	Section III - Evaluation and Qualification Criteria		We respectfully request you to consider 132kV & above rating end user certificate in the Minimum Criteria to be met by Manufacturers	132kV and above rating is acceptable.
188	13. Power Transformers 13.3.5 Tank		The accessories gasket will be provided as per supplier practice.	Bidder query is unclear Follow the Bid requirements.
189	13. Power Transformers 13.3.6 Valves		Transformer shall be offered with Butterfly type for radiators valves and ball type for other valves.	Butterfly valves for Radiators confirmed. Gate valves shall be preferred for the other valves.
190	3.132-33kV POWER TRANSFORMER (AIS-AIS) 11)OLTC		The step voltage of requirements OLTC is 2204V. But The Vacuum type OLTC having maximum step voltage is 2000V. So for matching step voltage(2204V) requirements each phase use each OLTC that is very costly also lead time have more than 1.5year. So We Proposed ± 10 step $\times 1.336\%$. By keeping same tap range 13.36%. Please accept.	Follow the requirement as in the TDS.
191	General	Transportation	Due to hazardous nature of nitrogen transformer shall be shipped with dry air/ Oil filled. Please confirm.	Not acceptable.

192	General	Ability to Withstand Short Circuit	Please note that, we shall be providing short circuit calculation as per IEC 60076-5 during detailed engineering. We shall not be conducting short circuit withstand test for offered transformer, neither will we be proving similarity with reference transformer. Please confirm.	Not confirmed.
193	General	LCC and RTCC	The LCC shall be IP 55 and RTCC shall be IP 41. Please confirm.	LCC shall be IP55 & RTCC shall be IP51
194	General	CT	Presently we have considered 2 X WTI + 1AVR CT only.	This is acceptable.
195	Specific Procurement Notice	Specific Procurement Notice	<p>We noticed there are 2 documents for Specific Procurement Notice:</p> <ul style="list-style-type: none"> - First one named "FINAL SPN - Procurement for Kabarnet-Rumuruti SUBSTATION Extensions 027" with IFB OCBI No: KETRACO/PT/027/2025. - Second named "Part 1 and 3 Bid Document" with IFB OCBI No: KETRACO/PT/001/2024-Lot 5 <p>Please confirm which IFB OCBI number is the correct one.</p>	The Correct IFB OCBI No. is KETRACO/PT/027/2025.
196	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI -TELECOM-001	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI -TELECOM-001	Distance to Rumuruti Solar is not provided, distance is required for considering SFP towards rumuruti solar. Is it required to consider the "ODF 48Core FC/PC (Future)" in the offer?	Not required
197	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI -TELECOM-001	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI -TELECOM-001	Please share the detailed of Existing FOX615 in Rumuruti SS (HE Number), since we do not have the current status in our database. Please provide configuration, number of ports used in the SDH module and remaining slots available for the upgrade.	Refer to response of Item No.90 of TAC 2


198	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001	Is it require to offer modules for 6x distance protection (future) relays & 6x differential protection (future) relays?	Refer to response of Item No.91 of TAC 2
199	Telecommunication System Layout Kabernet 132/33kV Substation Dwg no. KABERNET-TELECOM-001	Telecommunication System Layout Kabernet 132/33kV Substation Dwg no. KABERNET-TELECOM-001	Is it require to offer modules for 2x distance protection (future) relays & 2x differential protection (future) relays?	Refer to response of Item No.92 of TAC 2
200	Telecommunication System Layout Rumuruti 132/33kV Substation & Kabernet 132/33kV Substation	Telecommunication System Layout Rumuruti 132/33kV Substation & Kabernet 132/33kV Substation	We noticed distance protection relay on Rumuruti has 4 wire interface to existing relay & IEC 61850 interfaces to new relays and in Kabernet has C37.94 interface. The distance protection is command based as per Kenya standard, please clarify whether we can offer command based distance protection as standard in Kenya Network.	Refer to response of Item No.93 of TAC 2
201	Telecommunication System Layout Rumuruti 132/33kV Substation & Kabernet 132/33kV Substation	Telecommunication System Layout Rumuruti 132/33kV Substation & Kabernet 132/33kV Substation	STM-1 link is given in the Telecom System layouts for Rumuruti 132/33kV Substation & Kabernet 132/33kV Substation, as per Kenya's standard STM-4 is minimum required, please clarify.	Refer to response of Item No.94 of TAC 2
202	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001	Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001	We can see there is requirement for New SDH equipment in OLKALAU & MARALAL, but the in the BoQ those MUXs are not mentioned. Are those new MUXs to be included in this project? Please clarify.	Refer to response of Item No.95 of TAC 2
203	Section IV-Price Schedules-Kabernet 132-33kV SS, Schedule_1_SS	9.3Modification works at existing IP Phone including all necessary Licenses, Network switches and any other facilities for communication with NCC,RCC and NSCC	As no new phones are required, we assume this refers to reconfiguration (if applicable) only to be part of commissing work. No new items/license are required. Please confirm.	Refer to response of Item No.16 of TAC 3
204	Section IV-Price Schedules-Kabernet 132-33kV SS, Schedule_1_SS	9.6All necessary licences, hardware, software and configuration needed for the existing network management system (NMS) to create the STM-1 link that forms part of the Optic network from Kabernet 132/33kV Substation and other Substation to the NCC/RCC/NSCC	In Telecommunication System Layout Kabernet 132/33kV Substation Dwg no. KABARNET-TELECOM-001 is shown STM-1 as bandwidth requirement, but	Refer to response of Item No.96 of TAC 2



			as per Kenya Telecom STM-4 is the minimum bandwidth requirement. Please confirm.	
205	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.7 Required equipment for modification works at existing PABX in Lessos RCC including all necessary Licenses, Network switches and any other facilities for communication with NCC,RCC and NSCC	As no new phones are required, we assume this refers to reconfiguration (if applicable) only to be part of commissioning work. No new items/license are required. Please confirm.	Refer to response of Item No.17 of TAC 3
206	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.1 Optical Distribution panel for Main Communication room	In Telecommunication System Layout Kabarnet 132/33kV Substation Dwg no. KABERNET-TELECOM-001 is shown one existing ODF in the ODF panel. However the existing ODF is a wall mounted ODF (WODF) not 19" patch panel. WODF can not be installed in the panel. Please confirm if we should supply a panel for one ODF only or the new ODF can be supplied as WODF.	Refer to response of Item No.97 of TAC 2
207	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.2 Optical Distribution Unit (OCDF) 48 cores fiber for Main Communication room	In Telecommunication System Layout Kabarnet 132/33kV Substation Dwg no. KABERNET-TELECOM-001 is shown 4 ODF in the panel being 2 for Future use. Please confirm if the future ODF shall be included or not.	Refer to response of Item No.98 of TAC 2
208	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.3 Digital Distribution Unit (ODF) for 48 cores fiber	We do not understand the difference between 9.8.2 (OCDF) and 9.8.3 (ODF). Please clarify.	Refer to response of Item No.99 of TAC 2
209	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.4 Tail Optical Fiber	We understand that this is indicating to pigtails which will be delivered along with patch panels (OCDF/ODF) as per actuals. Please confirm.	Refer to response of Item No.100 of TAC 2
210	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.5 48 cores Optical Cable	We understand this as Approach Cable. Please confirm.	Refer to response of Item No.101 of TAC 2
211	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.6 2M Coaxial Cable	This not applicable for FOTE. Please clarify.	Refer to response of Item No.102 of TAC 2

212	Section IV-Price Schedules-Kabarnet 132-33kV SS, Schedule_1_SS	9.8.10OPGW Splice Closures joint box with all accessories	As per the drawings KABARNET -TELECOM-001 we have one existing direction and one new direction. Therefore we understand that only one Joint Box will be required. Also in the item 9.8.2/9.8.3 is required one ODF only. The number of ODF and the number of Joint Box shall be always the same. Please clarify the discrepancy and whether ODF/Joint Box shall be considered for future direction or not.	Refer to response of Item No.18 of TAC 3
213	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.5All necessary licences, hardware, software and configuration needed for the existing network management system (NMS) to create the STM-1 link that forms part of the Optic network from Rumuruti 132/33kV Substation and other Substation to the NCC/RCC/NSCC	In Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001 is shown STM-1 as bandwidth requirement but as per Kenya Telecom STM-4 is the minimum bandwidth requirement. Please confirm.	Refer to response of Item No.103 of TAC 2
214	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.6Required equipment for modification works at existing PABX in Lessos RCC including all necessary Licenses, Network switches and any other facilities for communication with NCC,RCC and NSCC	As no new phones are required, we assume this refers to reconfiguration (if applicable) only to be part of commissioning work. No new items/license are required. Please confirm.	Refer to response for Item No.201 above.
215	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.2Optical Distribution Unit (OCDF) 48 cores fiber for Main Communication room	In Telecommunication System Layout Rumuruti 132/33kV Substation Dwg no. RUMURUTI-TELECOM-001 is shown 5 ODF in the panel where 1 existing, 3 required and 1 for future use. We understand that one ODF panel including 3 ODFs is required. Please clarify why only 2 ODFs are required instead of 3 and whether the ODF for the future use shall be included or not.	Refer to response of Item No.104 of TAC 2
216	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.3Digital Distribution Unit (ODF) for 48 cores fiber	We do not understand the difference between 9.7.2 (OCDF) and 9.7.3 (ODF). Please clarify and also refer to the comment in 9.7.2.	Refer to response of Item No.105 of TAC 2

217	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.4Tail Optical Fiber	We understand that this is indicating to pigtails which will be delivered along with patch panels (OCDF/ODF) as per actuals. Please confirm.	Refer to response of Item No.106 of TAC 2
218	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.548 cores Optical Cable	We understand this as Approach Cable. Please confirm.	Refer to response of Item No.107 of TAC 2
219	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.62M Coaxial Cable	This not applicable for FOTE. Please clarify.	Refer to response of Item No.108 of TAC 2
220	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.7.10OPGW Splice Closures joint box with all accessories	As per the drawings RUMURUTI- TELECOM-001 we have 1 existing direction, 3 new directions and 1 for future. Therefore we understand that no joint box will be required for future direction. Also the number of ODFs and Joint Boxes are not matching. Those shall be same. Please clarify.	Refer to response of Item No.19 of TAC 3
221	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.8.1Exchange	We understand EPABX shall be analogue type and installed at Guard House. Please confirm.	Refer to response of Item No.109 of TAC 2
222	Section IV-Price Schedules-Rumuruti 132-33kV SS, Schedule_1_SS	9.8.2Telephone Equipment	We understand those are analogue telephone type. Please confirm.	Refer to response of Item No.110 of TAC 2
223	18. Diesel Generator Part 2-Employer's Requirements & Section IV-Price Schedules-Kabarnet 132-33kV SS &	2.9 Rated Output 250(Kabarnet)/315 (Rumuruti) KVA 13.1.3 Diesel Generator 315kVA including generator control and protection aFIf31 and all peripheral equipment, reservoir(s), (foundations, structure), and accessories. 1.3.2 Extension Works at Kabarnet 132/33 kV Substation	In Kabarnet Price Scheduled there is no Diesel Generator of 250KVA requirement shows. However, in technical data sheet and Part 2 Employer requirement Client mentioned Diesel generator requirement for Kabarnet. Please confirm requirement of DG Set in Kabarnet substation.	Requirement of Emergency Diesel Generator at Kabarnet SS is confirmed. Please refer to the revised price Schedule-

	Section IV-Price Schedules-Rumuruti 132-33kV SS	<p>Supply, installation, test and commissioning of One (1) 0.415kV, 250kVA Diesel Generator. Separate Diesel Generator Control panel interfaced to the Substation Control System, daily and Bulk fuel storage tanks, pipework, pumps and dedicated battery charger and associated batteries. Diesel Generator should be installed in its own generator house.</p> <p>1.3.1 Extension Works at Rumuruti 132/33 kV Substation</p> <p>Supply, installation, test and commissioning of One (1) 0.415kV, 315kVA Diesel Generator. Separate Diesel Generator Control panel interfaced to the Substation Control System, daily and Bulk fuel storage tanks, pipework, pumps and dedicated battery charger and associated batteries. Diesel Generator shall be installed in its own generator house.</p>		item 4.4 Under Item 2 of Addendum 4.
224	Part 2-Employer's Requirements & Section IV-Price Schedules-Kabarnet 132-33kV SS	<p>h) Other electrical, mechanical and civil works including complete equipment as per technical requirements and tender drawings:</p> <p>Construction of new Emergency diesel generator house Construction of new Storage warehouse measuring approximately 24m X 60m X8m and as per the tender drawings. The storage warehouse should be equipped with an Electric Overhead Travelling (EOT) of a minimum of 5 tons Construction of Internal Access Roads within substation to match existing road standard Construction of technical staff housing (4 units) and security housing (3 units) as per tender drawings Removal, Modification and Completion of existing Boundary Wall / Fencing Construction of new Firefighting Pump Houses Extension of control room building to accommodate additional panels Extension of guard house to include collocation room</p> <p>13.25 Diesel generator house Civil works (including Excavation, concrete works, backfilling, etc.) together with building services (e.g. Lighting,</p>	<p>There is discrepancy between Layout, Price Scheduled and Part 2 Employer Requirement. In Price scheduled shows only work of Construction of Diesel generator house. However, as per layout legends all the buildings and parking shed shows in existing. We need confirmation from client that there is any construction of building and car parking shed work in extension of Kabarnet substation work.</p>	<p>1. At Kabarnet SS, Control Building Extension is required, Construction of Guard house and telecom collocation room and Diesel Generator room is required.</p> <p>Refer to Item 2 of Addendum 4, TAC-5 for the Revised price schedules.</p> <p>Refer to the Item 1 of Addendum 4, TAC-5 for the Revised Overall Layout KABARNET-OVERALL -003 REV.02</p>

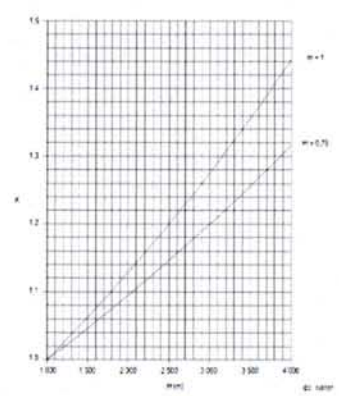
		<p>Small Power System, Fire Detection and handheld fire extinguishers) Lot 1</p> 		
225	<p>Section IV-Price Schedules-Kabarnet 132-33kV SS & Section IV-Price Schedules-Rumuruti 132-33kV SS</p>	<p>8 CONTROL AND PROTECTION SYSTEM IN EXISTING REMOTE SUBSTATIONS 8.1 Equipment for Modification works at Remote SS (Already considered at Rumuruti - Lot 0</p> <p>8 CONTROL AND PROTECTION SYSTEM IN EXISTING REMOTE SUBSTATIONS 8.1 Equipment for Modification works at Remote substations (Already considered at Kabarnet) Lot 0</p>	<p>We need confirmation from client did bidders need to consider this in Scope. If yes then please share Qty. and details of Remote SS in both Substation Kabarnet and Rumuruti.</p>	<p>Yes, the Bidder should consider modification of control and protection in the existing Remote Substations. Refer to item 2 of Addendum-4 for the revised price schedule.</p>
226	<p>Section IV-Price Schedules-Kabarnet 132-33kV SS & Section IV-Price Schedules-Rumuruti 132-33kV SS</p>	<p>Rumuruti Price Scheduled</p> <p>13.23 Firewalls for Power Transformers (including: excavatin, backfill, reinforced concrete, lean concrete, formatting, grout, reinforcement, metal works and fittings and others) (Not required) Lot 0</p>	<p>In Kabarnet I didn't find requirement of Firewall Works for Power transformer. In Rumuruti in Sr. no. 13.23 its qty. mentioned Zero. We need confirmation from client whether it is needed to consider in Scope or not.</p>	<p>Fire wall is not required for Kabarnet and Rumuruti Substations.</p>

227	2. 33KV Open Terminal Switchgear	<p>33KV Conductors</p> <p>6.3.3 Rated Short Circuit Withstand Current and its duration 25/1 KA/Sec</p> <p>33KV Insulators</p> <p>7.2.3 Rated Short Circuit withstand current and its duration 25/1 KA/Sec</p> 	<p>We need confirmation from client that in both clause 6.3.3 & 7.2.3 we need to consider 25KA/3sec as per SLD of both Substation.</p>	<p>Consider Rated short Circuit withstand current and its duration as 25kA/3s for both the 33kV conductors and 33kV insulators. Refer to item No 3 of Addendum 4 for the revised technical data Schedules.</p>
228	<p>2. 33KV Open Terminal Switchgear</p> <p>Section IV-Price Schedules-Kabarnet 132-33kV SS & Section IV-Price</p> <p>Schedules-Rumuruti 132-33kV SS</p>	<p>Price Scheduled 1 Tubular Conductor</p> <p>1 18 Conductor — Tubular Lot 1</p> 	<p>During our site visit we seen that there is conductor and there is no tubular conductor we have seen during our visit in existing substation. Can you please confirm for new extension of substation work we need to consider</p> <p>same philosophy or we need to consider tubular conductor.</p>	<p>The main busbar shall be rigid/tubular conductor. Refer to the layouts and section drawings of respective substations for the type of busbars to be used in the substation.</p>
229	1. 132 KV Open Terminal Switchgear	<p>String Insulators</p> <p>7.23 Total Creepage distance of String : 4459 mm</p> <p>Post Insulator</p> <p>7.52 Insulator Material : Ceramic/Polymer</p> <p>33KV Insulator</p> <p>7.52 Insulator Material : Ceramic/Polymer</p> <p>3.2.17 Insulator</p> <p>Circuit breaker post insulators shall be ceramic and shall meet the requirements specified in the Technical Data</p>	<p>All other switchgear Equipments of 132KV Shows 4495 mm creepage distance.</p> <p>Kindly confirm.</p> <p>2. Kindly confirm Post insulator material whether it is ceramic or polymer type.</p>	<p>1. Please consider 4495m for the total creepage distance of string insulators under item-7.23. Refer to item No 5 of Addendum 4 for the revised technical datasheet.</p>

		1.26 Type of Insulator (porcelain/silicon rubber): porcelain		2. Either Ceramic or polymer type are acceptable.
230	1. 132 KV Open Terminal Switchgear	Circuit Breaker, Disconnect Switch 4.15 Rated short time withstand current kA rms 31.5/1 Sec Conductor 6.3.3 Rated short circuit withstand current and its duration kA/sec 31.5/3	Kindly confirm Rated Short time withstand current for all Equipment.	Follow the bid requirement.
231	Section III: Evaluation and Qualification Criteria	3.2 Contractor's Representative and other Key Personnel Notes: The contractor's engineers who shall form part of the key personnel must be registered as Professional Engineers with the Engineers Board of Kenya.	Regarding the requirement stating that "The contractor's engineers who shall form part of the key personnel must be registered as Professional Engineers with the Engineers Board of Kenya," we have the following inquiries: 1.Among the personnel we provide, is it necessary to include engineers registered with the Engineers Board of Kenya? 2.All our engineers hold certification credentials issued by authoritative institutions. Does this qualification meet the aforementioned requirement?	Refer to the response for Item 40 in the TAC-3
232			Please confirm that the control cable is armored with steel tape.	Please follow the bid requirement in the Employer's Requirement

				clause 19.3.3 control cables
233		<p>Part 2-Employer's Requirements</p> <p>1.16.1 Basic Design and Construction of Cubicles</p> <p>The cubicles shall be vermin proof and protected against dust and water by protection class IP51 for indoor and IP55 for outdoor, and against external mechanical impacts according to protection code IK06.</p> <p>E -TECHNICAL DATA SCHEDULES</p> <p>7.7. PROTECTION,CONTROL AND METERING</p> <p>2.2 Degree of protection of panels: Indoor IP54</p> <p>8.LOW VOLTAGE AC SYSTEM:</p> <p>2.2 Degree of protection of panels: Indoor IP54</p>	<p>The IP of indoor cabinet in the section 1.6.1 and TDS are different. Please confirm the IP of the indoor cabinets.</p>	<p>Follow the technical data schedule of each equipment for the degree of protection.</p>
234		<p>Dear Sir Madam,</p> <p>This letter serves to clarify our compliance with the personnel requirements outlined in the Employer's Requirements (Section VII, Page 186, Notes) of the above-referenced bid document, specifically:</p> <p>"All personnel shall be fluent in reading, writing and speaking the English language. The contractor's engineers who shall form part of the key personnel must be registered as Professional Engineers with the Engineers Board of Kenya."</p>	<p>1. English Language Proficiency</p> <p>We confirm that all proposed key personnel meet the requirement of fluent English proficiency in reading, writing, and speaking.</p> <p>2. Registration with the Engineers Board of Kenya</p> <p>Currently, our proposed key engineers are not registered as Professional Engineers with the Engineers Board of Kenya. We hereby clarify that upon receipt of the Notification of Award, we will immediately initiate the application process to register these key engineers with the Engineers Board of Kenya, ensuring full compliance with the board's</p>	<p>1. Noted</p> <p>2. Refer to the response for Item 40 in the TAC-3.</p>

			<p>regulations. We will complete the registration and provide proof to KETRACO prior to commencing on-site work.</p> <p>We kindly request confirmation that this approach is acceptable. Please advise of any further requirements at your earliest convenience.</p>																																																																																																																																																	
235	<p>Part 2-Employer's Requirements Page 636</p>	<p>2.11.1.3 Rated one min. power frequency withstand voltage kVrms 95/3</p> <p>2.11.1.4 Rated lightning impulse withstand voltage kVpeak 250/N.A</p>	<p>IEC 62271-1:2017 © IEC 2017 - 33 -</p> <p>Table 1 – Rated insulation levels for rated voltages of range 1, series 1</p> <table border="1"> <thead> <tr> <th rowspan="2">Rated voltage U_n kV (RMS value)</th><th colspan="2">Rated short-duration power-frequency withstand voltage U_{100} kV (RMS) values</th><th colspan="2">Rated lightning impulse withstand voltage U_{imp} kV (peak value)</th></tr> <tr> <th>Common value</th><th>Across the isolating distance</th><th>Common value</th><th>Across the isolating distance</th></tr> </thead> <tbody> <tr><td>(1)</td><td>(2)</td><td>(3)</td><td>(4)</td><td>(5)</td></tr> <tr><td>3.6</td><td>10</td><td>12</td><td>26</td><td>29</td></tr> <tr><td></td><td></td><td></td><td>40</td><td>45</td></tr> <tr><td>7.2</td><td>20</td><td>23</td><td>40</td><td>45</td></tr> <tr><td></td><td></td><td></td><td>60</td><td>73</td></tr> <tr><td>12</td><td>28</td><td>32</td><td>60</td><td>73</td></tr> <tr><td></td><td></td><td></td><td>75</td><td>85</td></tr> <tr><td>17.5</td><td>38</td><td>45</td><td>75</td><td>85</td></tr> <tr><td></td><td></td><td></td><td>95</td><td>110</td></tr> <tr><td>24</td><td>50</td><td>60</td><td>95</td><td>110</td></tr> <tr><td></td><td></td><td></td><td>125</td><td>145</td></tr> <tr><td>36</td><td>75</td><td>90</td><td>145</td><td>165</td></tr> <tr><td></td><td></td><td></td><td>175</td><td>195</td></tr> <tr><td>40.5 (NOTE)</td><td>80</td><td>90</td><td>185</td><td>215</td></tr> <tr><td>52</td><td>95</td><td>110</td><td>250</td><td>290</td></tr> <tr><td>72.5</td><td>140</td><td>160</td><td>325</td><td>375</td></tr> <tr><td></td><td>150</td><td>175</td><td>380</td><td>440</td></tr> <tr><td>103</td><td>185</td><td>210</td><td>450</td><td>520</td></tr> <tr><td></td><td>195</td><td>210</td><td>450</td><td>520</td></tr> <tr><td>123</td><td>230</td><td>265</td><td>550</td><td>630</td></tr> <tr><td></td><td>230</td><td>265</td><td>550</td><td>630</td></tr> <tr><td>145</td><td>275</td><td>315</td><td>650</td><td>750</td></tr> <tr><td></td><td>275</td><td>315</td><td>650</td><td>750</td></tr> <tr><td>173</td><td>325</td><td>375</td><td>750</td><td>860</td></tr> <tr><td></td><td>360</td><td>415</td><td>850</td><td>990</td></tr> <tr><td>245</td><td>395</td><td>460</td><td>950</td><td>1 050</td></tr> <tr><td></td><td>460</td><td>530</td><td>1 050</td><td>1 200</td></tr> </tbody> </table> <p>NOTE: The rated voltage of 40.5 kV is recognised in IEC 60630:2009 with a note that, in relation with the rated voltage of 36 kV is under consideration. Present values are adopted from IEC 60071-1:2006, Annex B.</p> <p>According to IEC 62271-1, the internal insulation of the auxiliary transformer should be rated short-duration power-frequency withstand voltage 70kV, rated lightning impulse withstand voltage 170kv; the requirements of 95kV power frequency withstand voltage and 250kV lightning impulse</p>	Rated voltage U_n kV (RMS value)	Rated short-duration power-frequency withstand voltage U_{100} kV (RMS) values		Rated lightning impulse withstand voltage U_{imp} kV (peak value)		Common value	Across the isolating distance	Common value	Across the isolating distance	(1)	(2)	(3)	(4)	(5)	3.6	10	12	26	29				40	45	7.2	20	23	40	45				60	73	12	28	32	60	73				75	85	17.5	38	45	75	85				95	110	24	50	60	95	110				125	145	36	75	90	145	165				175	195	40.5 (NOTE)	80	90	185	215	52	95	110	250	290	72.5	140	160	325	375		150	175	380	440	103	185	210	450	520		195	210	450	520	123	230	265	550	630		230	265	550	630	145	275	315	650	750		275	315	650	750	173	325	375	750	860		360	415	850	990	245	395	460	950	1 050		460	530	1 050	1 200	<p>The conventional value of IEC is Confirmed. Refer to item No 5, Addendum 4 for the revised Technical Data Schedules.</p>
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			in the parameter table are unreasonable. The insulation in the windings is in the oil rather than in the air, so no altitude correction is required. Please confirm whether it is possible to respond with the conventional values of IEC?	
236	Part 2-Employer's Requirements Page 527&Page 531 Page577&Page581	<p>P527:</p> <p>Insulation</p> <p>4.22 Basic Insulation level (at site condition) kV peak 750</p> <p>4.24.1 Dry 325</p> <p>P531:</p> <p>Insulation ratings</p> <p>5.14 Basic insulation level (at site condition) kV peak 750</p> <p>5.16 One-minute power frequency withstand voltage (at site condition)</p> <p>kV rms 325</p> <p>P577:</p> <p>Insulation</p> <p>4.22 Basic Insulation level (at site condition) kV peak 250</p> <p>4.24.1 Dry 95</p> <p>P581:</p> <p>Insulation ratings</p> <p>5.14 Basic insulation level (at site condition) kV peak 250</p> <p>5.16 One minute power frequency withstand voltage (at site condition)</p>	<p>61889-1 © IEC 2007</p> <p>- 27 -</p>  <p>Key:</p> <p>These factors can be calculated with the following equation:</p> $K = \exp \left[\frac{H}{25} - 1.03 \right] / 0.150$ <p>where:</p> <ul style="list-style-type: none"> H is the altitude in metres $m = 1$ for power frequency and lightning impulse voltage $m = 0.75$ for switching impulse voltage <p>1. In the CT and VT parameter table, the insulation level is special. At an altitude of 2000m, according to the IEC standard, the corrected insulation is inconsistent with that in the parameter table. Please confirm the altitude and insulation level, or do you accept the corrected insulation level according to the IEC standard?</p>	Bidders shall use the Altitude corrected values.

		kV rms 95	<p>2. According to the IEC standard, the corrected insulation class at an altitude of 2000 meters is:</p> <p>33kV Rated lightning impulse withstand voltage : 193kV</p> <p>33kV Rated power-frequency withstand voltage : 80kV</p> <p>145kV Rated lightning impulse withstand voltage : 735kV</p> <p>145kV Rated power-frequency withstand voltage : 311kV</p> <p>Please confirm whether you accept this data.</p>	
237	Part 2-Employer's Requirements Page 359	<p>12. Fault Monitoring System and Alarm System</p> <p>12.1 General</p>	<p>The specifications mention the FMS system, but it is not listed in the Price Schedules. Please clarify whether the Fault Monitoring System is required.</p>	<p>Fault Monitoring system and alarm system is required for Kabarnet and Rumuruti Substations. Refer to item 2, Addendum 4 for the revised price schedule</p>
238	Part 2-Employer's Requirements Page 330	<p>10.2 Scope of Works</p> <p>415/240 LVAC Switchgear:</p> <p>1 – Main distribution board to be installed in the substation control building with two sections, fully metal enclosed design, draw-out type</p>	<p>If draw-out type panels are used, the AC/DC Room will not have sufficient space to accommodate these AC/DC panels. Is it acceptable to use a fixed type for AC/DC panels?</p>	<p>Not acceptable. Follow the Employer's Requirement 10.2 Scope of Works 415/240 LVAC Switchgear.</p>

239	Part 2-Employer's Requirements Page 330	<p>10.2 Scope of Works</p> <p>2 110V DC System for Substation power supplies comprising :</p> <p>1 - 110V DC Switchboard with two sections, fully metal enclosed design, draw-out type</p>	The specifications mention the DC switchboard is specified as a draw-out type. However, conventional substations typically utilize fixed 110V DC Switchboard. Pls kindly confirm whether Is it acceptable to use a fixed type for DC panels?	Follow the bid requirement																									
240	<p>Part 2-Employer's Requirements Page 330</p> <p>Part 2-Employer's Requirements Page 726</p>	<p>10.2 Scope of Works</p> <p>1 415/240 LVAC Switchgear:</p> <p>Section VI. Employer's Requirements- D - Drawings 2-726</p> <table border="1"> <thead> <tr> <th colspan="2">LOW VOLTAGE AC SYSTEM</th><th>UNIT</th><th colspan="2">DATA</th></tr> <tr> <th></th><th></th><th></th><th>REQUIRED</th><th>OFFERED</th></tr> </thead> <tbody> <tr> <td>2.5</td><td>Type of main circuit breakers</td><td>ACB/ MCC B</td><td>ACB</td><td></td></tr> <tr> <td>2.6</td><td>Type of outgoing circuit breakers</td><td>MCB / MCC B</td><td>MCCB/MCB</td><td></td></tr> <tr> <td>2.7</td><td>Continuous rating of busbars</td><td>A</td><td>>1000</td><td></td></tr> </tbody> </table>	LOW VOLTAGE AC SYSTEM		UNIT	DATA					REQUIRED	OFFERED	2.5	Type of main circuit breakers	ACB/ MCC B	ACB		2.6	Type of outgoing circuit breakers	MCB / MCC B	MCCB/MCB		2.7	Continuous rating of busbars	A	>1000		<p>Based on the Technical data schedules ,the type of main circuit breakers is designated as ACB and the type of outgoing circuit breakers is specified as MCCB or MCB.</p> <p>Please kindly confirm whether Is it acceptable to use appropriate circuit breakers based on actual project needs? For instance, could MCCBs be only employed for main circuit breakers?</p>	Not Confirmed. Follow the bid requirement
LOW VOLTAGE AC SYSTEM		UNIT	DATA																										
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241

TAC 2 KABARNET
RUMURUTI Page 3
23MVA Power
Transformer_TDS_REV.0
1

2	Transformer losses	<p>132/32 kV Power Transformer</p> <p>a) Maximum no load losses: 12 kW</p> <p>b) Maximum load losses at 75°C and rated frequency:</p> <ul style="list-style-type: none"> - ONAF rated power (23MVA) and principal tapping: to be proved by test and calculation: 100 (Max) at 23MVA Base <p>Auxiliary Transformer</p> <p>a) Max. No Load Losses :0.65 kW</p> <p>b) Max. Load Losses: 3.0 kW</p>	<p>Transformers with losses 2.5% above the required losses will be rejected</p> <p>After factory acceptance tests of transformers, in case of the tested load loss and no-load loss values differ from the guaranteed ones, the below penalties will be applied as liquidated damages:</p> <p>- No Load: USD 9,000 / kW</p> <p>- Load Loss: USD 4,000 / kW</p>
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H.V. TERMINAL		L1/AC 650/275KV	
L.V. TERMINAL		L1/AC 170/70 KV	
L.V. NEUTRAL TERMINAL		L1/AC 170/70KV	
OPERATION CONDITION	LOAD LOSS	IMPEDANCE (S)	
H.V. / L.V.	0.712 KW	MAX TAP RATED TAPMIN TAP	
NO LOAD LOSS	18.650 KW	0.12	9.82
ON-LOAD TAP-CHANGE		NO LOAD CURRENT	0.12 %
TAP POSITION	CONNECTION MODE	POWER kVA	H.V. VOLTAGE V CURRENT A
1			
2			
3			
4	RK-R		
5	YK-Y		
6	BK-B		
7			
8			
9			
10			
11			
12			

TRANSFORMERS (AIS/AIS)		REQUIRED	OFFERED
18.2.	At second stage of cooling	Should be Filled By Tenderer	
a	HW/LV	kW	
b	HW/TV (if applicable)	kW	
c	LW/TV (if applicable)	kW	
18.2.	At third stage of cooling		
a	HW/LV	kW	Max. 60 kW (R12 Losses: 50 kW, Stray Losses: 10 kW)
b	HW/TV (if applicable)	kW	Should be Filled By Tenderer
c	LW/TV (if applicable)	kW	Should be Filled By Tenderer
	Load losses at 75 °C		Should be Filled By

			<p>Tac 2kabarnet Rumuruti Page 3 commits a maximum of 100kW for load loss, but in the 23MVA Power Transformer, the maximum load loss is 60kW. The two are contradictory, please confirm which is right.</p> <p>In addition, the parameter table for load Losses, 18.2.3 a H V/LV KW Max. 60kw (RI2 Losses: 50kW, Stray Losses: 10kW) , should be filled in at 18.2.2 a; since there are only stages 1 and 2 for cooling, stage 3 is not applicable.</p> <p>According to the on-site power transformer nameplate photo, the load loss is 97.944 kw. Does the load of the old power transformer and the new power transformer need to be kept same?</p>	<p>Stage 3 cooling not applicable for both Rumuruti and Kabarnet 132/33kV Power Transformers. Refer to item No. 4, Addendum 4 for the revised Technical Data Schedules.</p> <p>This is not a mandatory requirement.</p>
242		<p>Part 2-Employer's Requirements</p> <p>7.2.1.3 Modifications of Existing Overhead Line Feeders due to LILOs</p> <p>c.Main protection</p> <p>The existing system is composed of line distance and line differential protection. In this scope the contractor will implement main A and main B of line differential protection. The contractor will maintain the existing differential protection and replace the existing distance protection and panels with a new differential protection scheme and panels.</p> <p>The existing distance protection and panels shall be decommissioned and handed over to KETRACO.</p>	<p>Please provide a detailed description of the scope of work for replacing the distance protection.</p> <p>This should include which line bay at which specific substation is applicable. Also, please provide the brand and model of the differential protection required for the replacement.</p> <p>Clarify if the distance protection at the opposite end of the line in the remote substation needs to be replaced with differential protection as well.</p>	<p>There is no LILO connection in the current scope and hence there will be no replacement of distance and differential protection.</p>

			Finally, please update the Bill of Quantities (BOQ) accordingly.	
243	We respectfully seek clarification from the Employer regarding Clause 4.2(b) – Specific Experience Requirements – in Section III of the Bidding Documents, which states:	“Four (4) successfully accomplished and operated air insulated substations of 132/33 kV with double busbar configuration.”	<p>In reviewing this requirement, we would like to seek confirmation on the following three points:</p> <p>1. Whether substations of higher voltage levels (e.g., 220/110 kV) with similar scope and complexity are acceptable as equivalents to 132/33 kV substations?</p> <p>Rationale: In some cases, higher voltage substations involve more stringent design, equipment coordination, insulation requirements, and overall technical complexity. If such substations also include double busbar configurations and similar protection/SCADA/control systems, we believe they may demonstrate equal or greater capability than 132/33 kV AIS projects.</p> <p>2. Whether 110/35 kV substations (which are the standard transmission voltage levels in our country of origin) can be accepted as equivalent, particularly where 110 kV systems are functionally and operationally similar to 132 kV systems in Kenya?</p> <p>Rationale: In our country, 110 kV is the standard high-voltage transmission level. The design principles, busbar configurations, and protection philosophies of 110/35 kV</p>	<p>1. Confirmed</p> <p>2. Not Confirmed</p>

			<p>substations closely mirror those of 132/33 kV substations used in Kenya. We kindly seek confirmation whether these can be considered for compliance with the experience requirement.</p> <p>3. Whether Gas Insulated Substations (GIS) of 132/33 kV or above, with double busbar configuration, can be considered as acceptable alternatives to Air Insulated Substations (AIS)?</p> <p>Rationale: GIS technology is often applied in urban or space-constrained environments, and the engineering, installation, and testing requirements are more stringent than for AIS. We believe successfully completed GIS projects demonstrate sufficient technical experience, especially where the voltage level, configuration, and operational reliability requirements are similar or higher.</p> <p>We would be grateful if the Employer could clarify whether any or all of the above types of experience (i.e., higher voltage AIS, equivalent national voltage level AIS, or GIS substations) may be accepted as satisfying the criteria under Clause 4.2(b).</p> <p>We appreciate your consideration and look forward to your clarification.</p>	3. Not confirmed
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244	Section IV-Price Schedules-Rumuruti 132-33kV SSs	Section IV-Price Schedules-Rumuruti 132-33kV SS	In Rumuruti SS bidding drawings of 'RUMURUTI-GENERAL PLAN (SCOPE OF WORK)', there is a new guard room, but in the price schedule, no guard room was shown. Please clarify	Refer & follow item 2 of Addendum 4 for the revised price schedules.
245	Section IV-Price Schedules-Rumuruti 132-33kV SSs	Section IV-Price Schedules-Rumuruti 132-33kV SS	Schedule-4, item 13.11 and item 13.12, please clarify the difference of the fence.	This shall be addressed during detailed design.
246	Section IV-Price Schedules-Rumuruti 132-33kV SSs	Section IV-Price Schedules-Rumuruti 132-33kV SS	In Rumuruti SS bidding drawings of 'RUMURUTI-GENERAL PLAN (SCOPE OF WORK)', there is a new building close the parking area, please clarify if this building is the regional office which in the price schedule-4, item 17.3.5?	Yes, confirmed
247	Part 2-Employer's Requirements	Section IV-Price Schedules-Rumuruti 132-33kV SS	In clause A1.3.1, it is described that Construction of Internal Access Roads within substation to match existing road standard. During the site visit, the existing road the concrete type, however, in clause B16.10.10, the road type should be bituminous standard, please clarify.	The internal access road shall match with the existing road standards.
248	Part 2-Employer's Requirements	E -TECHNICAL DATA SCHEDULES 3. 132/33kV POWER TRANSFORMER (AIS-AIS)	According to the parameter table of the tender document for 132/33kV power transformers, the insulation level of the high-voltage winding is required to be 750kV (Lightning impulse withstand voltages) . However, in accordance with IEC 60071, the highest insulation level for the high-voltage winding corresponding to 145kV voltage grade is 650kV (Lightning impulse withstand voltages) , and the voltage grade	Refer to Item 15.1.1 of the revised Technical Data Schedules of 132/33kV POWER TRANSFORMER (AIS-AIS) Under Item 4, Addendum-4 of this TAC.

			corresponding to 750kV (Lightning impulse withstand voltages) is 170kV. Moreover, to meet the 750kV (Lightning impulse withstand voltages) insulation level, three single-phase MR On load tap changer need to be configured, which significantly increases the cost compared to the normal configuration of one three-phase MR On load tap changer. Please reconfirm whether the insulation level of the high-voltage winding needs to be 750kV (Lightning impulse withstand voltages) .	
249	Part 2-Employer's Requirements	E -TECHNICAL DATA SCHEDULES3. 132/33kV POWER TRANSFORMER (AIS-AIS)	The Bidding Document's 132/33kV Power Transformer Parameter Table requires the transformer oil type to be Diala S4 ZX-I. Can we respond with equivalent transformer oil (such as oil from CNOOC or the American Ergon brand)? Please clarify.	Not confirmed. Follow the bid requirement part-2 Employer's Requirement E -TECHNICAL DATA SCHEDULES 3. 132/33kV POWER TRANSFORMER (AIS-AIS) REV.03
250		RUMURUTI TELECOM SYSTEM LAYOUT DRAWING HARDWARE/SOFTWARE/LICENSE REQUIREMENTS IN THE REMOTE STATION (OLKALAU AND KABARNET) TOGETHER WITH OTHER STATIONS AS TRANSIT STATIONS SHALL BE INCLUDED FOR CONNECTION OF RUMURUTI TO NCC THROUGH THE EXISTING STM LINK.	Please provide the brand and model of communication equipment at the MARALAL and OLKALAU substation.	Maralal and Olkalau substations are not under the current scope
251		BOQ 9 TELECOMMUNICATION & NCC/RCC/NSCC 9.4, Required equipment for modifications to NCC/RCC/NSCC mimic board (if any)	9.4 NCC communication equipment brand/model is unknown. Regarding analog boards for switches, confirm the following: existing equipment model, quantity of analog	1. The existing NCC & RCC is ABB brand. Refer to the responses for Item No 45,46,47 and 48

		9.6, Required equipment for modification works at existing PABX in Lessos RCC including all necessary Licenses, Network switches and any other facilities for communication with NCC,RCC and NSCC	boards needed, and detailed specifications. 9.6 Clarify existing configuration at Lessos RCC: switch brand/model, and availability of 2M/low-speed service interfaces.	of TAC-2 for the existing communication equipment at NCC.																				
252	Part 2-Employer's Requirements Page 300 Part 2-Employer's Requirements Page 832 19.TDS-CCTV	<p>9.6.10 CCTV</p> <ul style="list-style-type: none">• IP Dome cameras – Internal and Externalii. Be designed to provide support for H.264 and MPEG-4 video, and support resolutions up to 1280x960 pixels using a 1.3MP CCD sensor with Wide Dynamic Range (WDR) Capabilities.viii. Built in PoE <p>19. TDS-CCTV,</p> <table><tr><td>3</td><td>Horizontal resolution in color mode</td><td>lines</td><td>>800</td></tr><tr><td>4</td><td>Vertical resolution</td><td>lines</td><td>>800</td></tr><tr><td>8</td><td>Video out put</td><td></td><td>1.0V-PAL Composite/75 Ω</td></tr><tr><td>9</td><td>Electronic shutter</td><td></td><td></td></tr><tr><td>11-2</td><td>Relative humidity</td><td></td><td>Less than 90%</td></tr></table> <p>TDS for CCTV DVR</p>	3	Horizontal resolution in color mode	lines	>800	4	Vertical resolution	lines	>800	8	Video out put		1.0V-PAL Composite/75 Ω	9	Electronic shutter			11-2	Relative humidity		Less than 90%	The specifications mention the cameras as network cameras (IP, 1280*960, 1.3MP, POE – all parameters specific to network, cameras),while the datasheet (items like 800 lines, 600 lines, 1.0V-PAL, DVR – these are parameters for analog cameras and analog video recorders) suggests otherwise. Since all cameras are now high-definition network cameras, if this project also support network cameras, please provide an updated CCTV datasheet.	Refer and follow the Item 7 of addendum 4 of this TAC.
3	Horizontal resolution in color mode	lines	>800																					
4	Vertical resolution	lines	>800																					
8	Video out put		1.0V-PAL Composite/75 Ω																					
9	Electronic shutter																							
11-2	Relative humidity		Less than 90%																					
253	1) As per Schedule no1. Clause No. 3.2.1 2) Section VII. Employer's Requirements- B - Specifications Clause no.13.5 Fire Protection	1) Fire Detection and Protection System (Oil Drain Pit, dry-powder/CO2 Fire Extinguisher) 2) The manufacturer shall include in his offer a suitable fire protection for Main Transformers (equal to and above 100 MVA), using Nitrogen Injection and Oil Evacuation System (NIFPS) as per KETRACO, KEBS, IEEE 979,NFPA 850 requirements, Detailed requirements have been mentioned in clause No. 18.25.6.	Kindly confirm whether we have to consider NIFPS or not.	NIFPS not needed for Rumuruti & Kabarnet stations.																				
254	1) E - Technical Data Schedules, Sub-Clause No. 1.138 Circuit Breaker (pg.506)	Electrical endurance class : E2	Note that As per IEC 62271-100, Clause no.3.4.113 E2 Class shall be used above 1kV and up to and including 52kV System. For 132kV System Shall we go with E1 Class. Please confirm.	Please refer to the response given for Item 45 in this TAC-5.																				
255	1) As per Schedule no1. Clause No. 2.1 2) As per tender SLD Doc no:KABARNET-SLD-33-02	1) 33kV CB Rating is 1600A, 31.5KA 2) 33kV CB Rating is 1250A ,25KA	Kindly Confirm the requirements.	Please refer to the response given for Item 9 of TAC-3.																				

256	1) As per tender SLD Doc no:KABARNET-SLD-33-02 2) Section VII. Employer's Requirements- B - Specifications Clause no.7.2.1.2	1) For 132kV Line bay Main-1 & Main-2 consist of both 21 & 87L. 2) Main-1 is Distance Protection and Main-2 is Differential Protection.	Kindly confirm the Philosophy.	Refer and follow the PSLD drawings.
257	1) As per tender SLD Doc no:KABARNET-SLD-33-02 2) Section VII. Employer's Requirements- B - Specifications Clause no.7.2.1.2	1) BCPU for Backup Protection. 2) Bay control and monitoring	Kindly confirm the requirement whether we shall go with BCU or BCPU.	Refer and follow the PSLD drawings.
258	1) E - Technical Data Schedules, Sub-Clause No. 14 Lighting & Telephone System, sub point 5.1 (pg.795) 2) Clause: 16.11.2.1.2 Lighting Systems – Normal, Emergency and External (pg.450)	1) Uniformity factor (E_{min}/E_{ave}), (E_{min}/E_{max}) = 1:3, 1:6 2) All normal lighting shall have uniformity levels (ratio of average to minimum) no less than 0.8.	As per point (1), uniformity factor mentioned as E_{min}/E_{ave} which gives value as 1:3, however formula for uniformity is E_{ave}/E_{min} . However if consider as E_{ave}/E_{min} value shall be 3:1 by which value to be maintain as 3 for uniformity which is not feasible. In clause: 16.11.2.1.2 mentions to maintain not less than 0.8. Kindly clarify uniformity factor to consider.	Please consider 0.8.
259	1) E - Technical Data Schedules, Sub-Clause No. 14 Lighting & Telephone System, sub point 3.30 (pg.794) 2) Clause No. 1.18 Detailed Design and Engineering (pg.139)	1) Lux level for Transformer area is 30lux 2) Outdoor; switchgear bays, transformers (on all sides), reactors (on all sides), junction boxes, bay and switchgear marshaling kiosks, power distribution cabinets, Diesel fuel pumps enclosure: 50 lux (min.)	As per clause 14.3.30 lux level for transformer area is 30lux. However in clause: 1.16.1 lux is for transformer area is 50lux.	50 Lux shall be required

260	<p>1) E - Technical Data Schedules, Sub- Clause No. 14 Lighting & Telephone System, sub point 2.2 (pg.793)</p> <p>2) Clause No. 1.16.1 Basic Design and Construction of Cubicles (pg.118)</p>	<p>1) indoor equipment ingress protection is meantion IP52</p> <p>2) The cubicles shall be vermin proof and protected against dust and water by protection class IP51 for indoor and IP55 for outdoor, and against external mechanical impacts according to protection code IK06.</p>	<p>As per clause 14.2.2 IP rating for indoor equipment is IP52, However clause: 1.16.1 meantion that the IP rating for indoor is IP51.</p>	<p>Refer to the response given for Item 233 above in this TAC-5</p>
261	<p>1) Clause no. 10. LV Service Equipment sub point 10.1 General Requirements (pg.329)</p> <p>2) Clause No. 1.3.1 Extension Works at Rumuruti 132/33 kV Substation (pg.21)</p>	<p>1) The 415/240 V AC, three phase, five wire (3~, N, PE) solidly earthed supply system shall comprise two 11/0.415kV earthing/ auxiliary transformers supplied from the transformer tertiary winding.</p> <p>2) Supply and installation of Two (2) No. 33/0.415kV, 315kVA and, ONAN auxiliary transformer, Dyn11, with 5 taps in step of 2.5% and z =4.5%. The existing transformer (100kVA) shall be decommissioned and delivered to the Client and the new one (315kVA) shall be installed in its place. Changeover facilities with the generator to be provided.</p>	<p>As per clause 10.1 the rating for Aux trafo. is 11/0.415V, However clause 1.3.1 the rating for Aux trafo. is 33/0.415V.</p>	<p>The Auxiliary Transformers are 33/.415kV.</p>
262	<p>2 core, CVT 6 nos. for main bus-1 & 2, required as per given Tender SLD.</p>	<p>in price schedule.</p> <p>1.17) 132 kV Capacitive voltage transformer protection and measuring two cores (1-phase) no. 3</p>	<p>AS per given SLD 6 nos, 2 core-CVT is required for Main bus 1 & 2, however in price schedule qty is only 3 nos. CVT.</p>	<p>Refer to the Item No.2 of this addendum for the revised price schedules.</p>

263	1) LVAC-SLD-0012) Clause No. 1.3.1.(C) Extension Works at Rumuruti 132/33 kV Substation	1 As per Existing LVAC SLD Existing auxiliary transformer shall be replaced/ upgraded with higher capacity together with its cabling based on EPC contractor calculation in detail design stage subject to client/consultant approval.1) Supply and installation of Two (2) No. 33/0.415kV, 315kVA and, ONAN auxiliary transformer, Dyn11, with 5 taps in step of 2.5% and z =4.5%. The existing transformer (100kVA) shall be decommissioned and delivered to the Client and the new one (315kVA) shall be installed in its place. Changeover facilities with the generator to be provided.	1.As per Existing LVAC SLD, existing incomer & philosophy is not mentioned. Kindly Provide existing ACDB incomer & philosophy and outgoing rating.	Refer to Item No.3 of Addendum No.2 of TAC-2
264	1) Clause No. 1.18 Detail design Engineering, page 140 2) E - Technical Data Schedules, Sub-Clause No. 14 Lighting & Telephone System, sub point no. 4, page 795	1) Emergency lighting in all substation buildings including Control room building (CRB), guard house, storage facility, pump houses/shelters, most direct internal road route from CRB to main gate: 50 lux (min.) 2) Minimum illumination level (emergency lighting):	Clause 1.18 mentions emergency illumination levels for CRB, guard house, storage & shelter as 50 Lux. However as in Clause no. 14 for Lighting & Telephone system point 4, emergency lighting lux for only control room is given. Rest mentioned rooms such as AC/DC, relay, battery, x'mer are not mentioned. Kindly confirm if emergency lux level shall be maintained as 50 lux for every area.	Min Lux level of 50 shall be required. This shall be finalized during detailed design.
265	1) Clause No. 1.18 Detail design Engineering, page 140 2) Clause No. 16.11.2.1.2 Lighting Systems – Normal, Emergency and External, page 448	1) Rooms for 415V AC main distribution panels, 110VDC and 48VDC battery banks, 110VDC and 48VDC battery chargers and distribution panels, UPS panels, basement cable chamber floor, corridors: 200 lux (min.) Rooms for Control Panels, Protection Panels, Metering Panels, SCADA Gateways/RTUs, offices, meeting rooms, MV Switchgear rooms, Telecommunication Panels, control room and office: 400 lux (min.)	As per clause 1.18, mentioned illumination levels for different areas are given as 200 & 400 minimum. However in clause 16.11.2.1.2 Lighting Systems, list of illumination level for different room differs from lux level mentioned in 1.18. Also to confirm if lux levels mentioned in table of clause 16.11.2.1.2 are given minimum or average.	Refer to the values in the clause 16.11.2.1.2
266	1) Clause No. 1.18 Detail design Engineering, page	1) For the battery rooms, the luminaires shall be equipped with flameproof	As per clause 1.18, luminaries for battery room to be consider as flame proof.	Explosion proof shall be considered.

	<p>140</p> <p>2) Clause No. 1.3.2 & 1.3.1 Extension Works at Kabarnet & Rumuruti 132/33 kV Substation, page 23 & 25</p> <p>3) Clause No. 16.11.3.2 Battery Room Exhaust Fans, page 460</p> <p>4) E - Technical Data Schedules, Sub-Clause No. 14 Lighting & Telephone System, sub point no. 15, page 799</p>	<p>energized appliances/ lenses.</p> <p>2) Point Z & Y:- Lamps in battery shall be explosion proof.</p> <p>3) Proper explosion proof bifurcated fans shall be installed complete with exhaust insulated ductwork, grilles and louvers. The fans shall be with the additional fitting of a spark minimizing impeller track and suitable for Group II gases (Battery room applications). The entire system shall be proofed against corrosive gases.</p> <p>4) Type of equipment in battery room - Explosion proof.</p>	<p>However in point 2, 3 & 4 luminaries & fans for battery room to be taken as explosion proof.</p> <p>Also highlighted in point no.3) system shall be corrosion proofed. For corrosion proof system, luminaries shall also to be consider as corrosion proof.</p> <p>Client to confirm whether luminaire & fan system for battery room shall be consider corrosion, explosion or flame proof.</p>	
267	<p>1. As per RUMURUTI-SLD-132-001</p> <p>2 As per RUMURUTI-TRAFO-PSLD-003</p>	<p>1. As per RUMURUTI-SLD-132-001 show in SLD Transformer NCT two core only.</p> <p>2.As per RUMURUTI-TRAFO-PSLD-003 show in schematic drawing Transformer NCT there core.</p>	<p>we have consider NCT two core cable as per RUMURUTI-SLD-132-001</p>	<p>2 core shall be Considered.</p>
268	<p>1) Clause No. 1.18 Detail design Engineering, page 140</p> <p>2) E - Technical Data Schedules, Sub-Clause No. 14 Lighting & Telephone System, sub point no. 5.2, page 795</p>	<p>1) Lighting for Indoor: Minimum Maintenance Factor: 0.9</p> <p>2) Maintenance factor for indoor lighting - 0.7</p>	<p>As per clause 1.18 maintenance factor to maintain minimum 0.9.</p> <p>However as per sub-clause 14 of Technical data shcedule, mainntenance factor to be maintain as 0.7.</p> <p>Kindly clarify & confirm.</p>	<p>0.7 shall be considered.</p>

269	132kV Insulators GTP, No. 7.2.1,7.2.2,	The height above sea level shall be considered 2000-2500m. Basic insulation level of equipment at site condition 750kV peak. Rated one-minute power frequency withstand voltage at site conditions. 325kV rms	Given the altitude level of 2000 meters above sea level and the specified BIL levels under site conditions, can you confirm whether a correction factor has already been applied	Correction factor has been considered.
270	Part 2 Employer's Requirement Clause 1.3.2	CRB and Guard House extension	The extension of the CRB and Guard House is mentioned in Clause 1.3.2 (e) but is not included in the price schedule for Kabarnet. Please confirm if the extension is required.	Refer and follow the revised price schedule Item 13.27 & 13.28 under Item 2 of Addendum 4 of this TAC-5.
271	Kabarnet Layout	Retaining Wall	Details of the retaining wall have not been issued.	Bidder shall conduct their own due diligence.
272	Part 2 Employer's Requirement Clause 1.3.1 (f)	Extension of Control Room and SCADA room	Please confirm if both the SCADA room and the Control Room Building are being extended. Since the layout shows the extension of the CRB building only.	Extension is required for the Control room building only.
273	1) E - Technical Data Schedules, Sub-Clause No. 1.8 Circuit Breaker (pg.495)	1) Rated Voltage of LA is 145kV.	Note that 145kV is Highest System Voltage and Rated Voltage shall be 120KV.Kindly confirm the value of 132KV LA Rated Voltage.	Please follow the Technical data schedule requirement.
274	1) RUMURUTI-SLD-33kV-002 (pg.3)	1) as per 33kV SLD (pg.3) considered the 33kV LA for BUS PT.	kindly confirm the requirement of 33kV LA at BUS PT.	33kV LA's not required at Bus PT.
275	1) Section IV-Price Schedules-Rumuruti 132-33kV SS, sub point - (2). 33kV PRIMARY PLANT, point 2.8 Post type current transformer, for protection, three cores (1-phase)	1) in clause no. 2.8 Post type current transformer, for protection, three cores (1-phase) is mention the 3 nos. quantity.	kindly confirm the requirement of 3 core 33kV CT.	Refer to the Item 2.8 of Schedule_1_SS of the Revised Price Schedules under Item 2 of Addendum 5.

276	-As per site visit report clause no. 9 _ Existing Cable trench/Duct -Price schedule - clause no. 10.3	3.Tray type- ladder or perforated or GI angles? _GI angles 5. Cable trench layout to control room _ Provided in the tender drawing 6. Existing cable trench/cable duct section details - width, depth, no. of tier, single/double side tier etc._Provided in the tender drawing 8.Control room building have internal cable trench or raised floor._Raised floor	-Kindly confirm if cable tray to be taken in consideration. As mention in price schedule. -Kindly Provide Control room trench layout. -For switchyard cable trench Kindly Provide no. of tier, single/double side tier. -kindly provide both levels of FGL & FFL. Also confirm slop details for kabarnet.	- Cable trays are required. - Control room & Switchyard cable trench layout & details shall be provided to the winning bidder -Bidders were taken for site visit & hence shall conduct their own due diligence.
277	18.Earthing and Lightning Protection (Page number: 2-473, Section VII. Employer's Requirements- B - Specifications)	Wherever required a lightning protection system shall be provided under strict observation of the local regulations and relevant Standards (e.g. IEC62305).	kindly confirm for switchyard area lightning protection we shall follow IEEE-998 and equivalent class from IEC-62305 for lightning protection of buildings shall be adopted.	Refer and follow the requirements as in 20.2 Applicable Codes and Standards, Part 2 Employer's Requirements.
278	1) As per Schedule no1. Clause No. 2.4 2) As per tender SLD Doc no:KABARNET-SLD-33-02	1) 33kV Surge arrester (1-phase) - Quantity is mentioned as 9 Nos. 2) 33kV Surge arrester (1-phase) - Quantity required is 12 Nos.	Kindly Confirm as per the tender SLD 12 Nos. are required, kindly confirm.	Confirmed. Refer to the Item 2.4 of the revised price schedules under Item 2 Of Addendum 4 of TAC-5.
279	1) As per Schedule no1. Clause No. 2.8 2) As per tender SLD Doc no:KABARNET-SLD-33-02	1) 33kV Post type current transformer, for protection, two cores (1-phase). - 3 Nos. is estimated 2) 33kV Post type current transformer, for protection, two cores (1-phase) - is not required.	Kindly Confirm the requirements.	Confirmed. Refer to the Item 2.8 of the revised price schedules under Item 2 of Addendum 4 of TAC-5.
280	1) As per Schedule no1. Clause No. 4.2 2) As per tender SLD Doc no:KABARNET-SLD-33-02	1) 40.5kV, 5A 1-phase cut off fuse - 6 Nos. is estimated 2) 40.5kV, 5A 1-phase cut off fuse - 3 Nos(for existing Auxiliary Tr.) are excluded from present scope	Kindly Confirm the requirements.	Refer to the response given to Item No.43 of TAC-2.

281	1) As per overall plan layout - KABARNET-OVERALL -002 & RUMURTI-OVERALL -002 2) Clause No. 1.18 Detail design Engineering, page 137	1) As mention in overall plan layout cable trench should be 600(H) X 600(W). 2) The cables will be laid separately according to their voltage level. AC power cables are preferably placed in cable trench bottom and DC cables on top.	The clearance between two G.I. angle is required 300mm and from FGL to first angle minimum clearance is 300mm however the trench depth is required is 1050mm. For better clarity kindly provide existing layout/section view.	Existing drawings for cable trenches not available.
282	Part 2 Employer's Requirement Clause 10.2 (2) Clause 10.3.2.3	2 - Battery Chargers 415V AC/110V DC, minimum 250 A rated, thyristor controlled, suitable for parallel operation with each other, sharing the load, complete with all the accessories, to be installed in the substation control building The battery chargers shall be thyristor- controlled devices and shall operate fully automatically have minimum capacity of 100A for 110V DC system.	Please confirm the output of the battery charger	Refer to the Item No.3 of Addendum 3 of TAC-3.
283	LV DC SLD	Dropper diode indicated	Please confirm the load voltage	Load voltage will be maintained to nominal level by the automatic introduction of suitable dropping diodes.