

Notice to all Bidders.

TENDER ADDENDUM AND CLARIFICATION No. 9 (TAC 9)


RE: Procurement of Plant, Design, Supply and Installation of the 220kV Mariakani - Dongo Kundu Transmission Line and Associated Substations (KETRACO/PT/045/2023)

The following amendments are made to the specified provisions for the bidding documents for procurement of plant, design, supply and installation of the 220kV Mariakani - Dongo Kundu Transmission Line and Associated Substations (KETRACO/PT/045/2023).

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. 9, consisting of eighteen (18) 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 Bids document remain the same.



PETER NJEHIA
SENIOR MANAGER, SUPPLY CHAIN

Tender Addendum and Clarification No. 9 of Tender No. KETRACO/PT/045/2023 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. 9.

The following amendments have been made to the bid documents.

i. Employers Requirements

Section VI-1B-05 Steel Tower Design

5.13 Aircraft warning markers, obstruction lights and tower painting

In restricted areas and pipeline crossings Aircraft Warning Markers (AWM) shall be fitted to the earth conductors and Air Traffic Obstruction Lights (ATOL) on the towers in order to satisfy requirements of Authorities. Where required by KETRACO, ATOL shall also be installed on the highest phase line conductor(s) and the towers shall be painted as specified.

- a. **Aircraft Warning Markers.** Where required AWM shall be spherical of 600 mm diameter and manufactured in fibreglass. The spheres shall be coloured International Orange which shall not fade when subjected to the direct rays of the sun. They shall be manufactured in two halves and designed such that assembly and attachment to the earth conductor is simple.

Provision for drainage shall be provided. Suitable clamping devices shall be provided which will not damage the conductor but will prevent the sphere from twisting or slipping on the conductor. All metal parts used for holding the spheres in position shall be of mild steel and galvanized.

The warning spheres shall be fixed on the earth conductor in any required span and shall be erected, as required by Chapter 6 of Annex 14 to the ICAO Regulations, at intervals of not more than 30 meters on the overall earth conductor system.

The first and last spheres in any span shall be approximately 10 meters from the towers defining the span.

With twin earth conductors, provided the spacing of the spheres on either earth conductor is suitably staggered to provide the above requirements, the placing of the spheres can be alternated between the two earth conductors at uniform spacing.

- b. **Air Traffic Obstruction Lights on Towers.** Where required ATOLs shall be installed on the towers defining the span, of International Standard red in colour, and having the following general features:
- I. conforming to Chapter 6 of Annex 14 to the ICAO Regulations
 - II. two lamps per tower of which only one may be lit at a time (by utilizing a switch-over relay)
 - III. having minimum luminous flux of approximately 10 candela, steady aviation red light
 - IV. having minimum lamp life time of approximately 20 000 hours.
 - V. all components shall be corrosion-proof for use in marine and damp tropical climate conditions.

The system offered shall be comprehensive and complete in every respect. If a system fed by cables is proposed, it shall be designed to withstand the induced high voltage that can occur during earth fault conditions. It shall consist of a constant current regulator, high voltage cable, dimmer switch, protection equipment, insulating transformers, lightning arresters, etc. The connection and cabling to the nearest available safe mains supply shall be deemed to be included.

Should a solar powered system be proposed, the battery supplied shall be able to maintain the minimum luminous flux of 10 candela under the condition of dusty solar cells. A battery maintenance interval of 5 years minimum shall be guaranteed. Photovoltaic panel output shall be de-rated, over and above age de-rating, by 40%, on account of dust accumulation on the panel surface. The upper edges of the solar panels shall be fitted with stainless steel needle strips, effectively preventing birds from sitting in these locations.

It shall be noted that the supply of equipment shall include the necessary spare parts as per the manufacturer's recommendations, for a service period of five years, the cost of which is to be included in the price quoted.

The tower obstruction light system shall be to the approval of the Engineer.

- c. **Aviation Warning Paint on Tower.** Where required and to comply with requirements of Authorities certain towers may need to be painted with two coats of approved epoxy resin type paint with red and white strips of widths complying with ICAO Regulations. The life span of the paint system shall be not less than 10 years and the colours shall not fade within this time under strong sun radiation.

ii. **Specifications**

The following section has been modified as attached to this Tender Addendum and Clarification No. 6.


- a) Power Line Aerial Markers Specifications



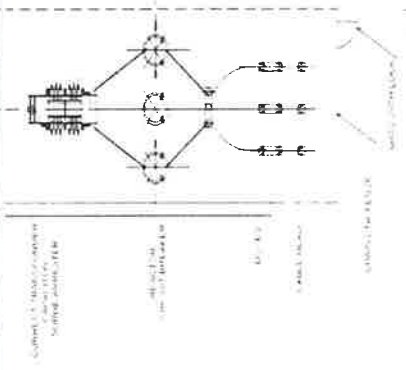
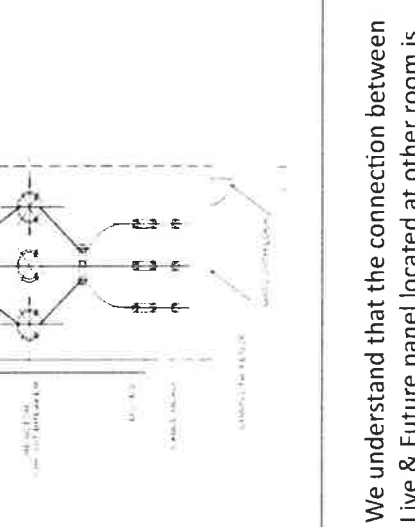
B. Clarification No. 9

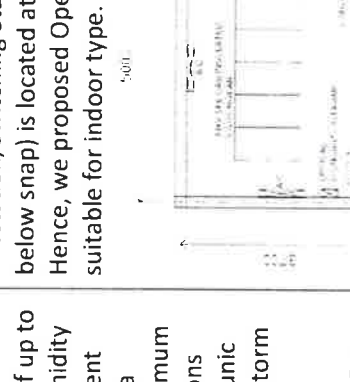
No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
1	Volume V of VII 37-Section-VI-2E- Drawings	2-MSEZ-2022-GN- E-002- IMPLEMENTATION SCHEDULE		In order to see more clear schedule of this Project, please also show schedule of other Japanese Yen Loan and Grant projects in Mombasa Special Economic Zone. Please clarify the commencement of the works for the followings (1) -(3). We are considering that the construction of distribution line of this project will be affected by the schedule of the Road project and the Port project. (1) Road project (2) Port project (3) Grant project	The latest schedule will be given to the successful bidder.
2	Volume I Bidding Documents Part I Bidding Procedures BDS-3	Section II Bid Data Sheet ITB 11.2 (j)	The Bidder shall submit the following additional documents in its Technical Bid: 1. Documents proving their eligibility for registration with NCA (National Construction Authority) class 1 in Kenya.	Please clarify whether the NCA standard of 30% local procurement in Kenya will be applicable for this project or not.	Refer to paragraph 6 of the Form of Invitation for Bids. Bidding will be conducted in accordance with the Guidelines for Procurement under Japanese ODA Loans (Special Terms for Economic Partnership – STEP apply).
3	03-Disconnectors & Earthing Switches Rev No 4 3.2 / VI-2B-03 - 2	Section VI-2B: Specifications - Substations	The disconnectors shall be of the single phase, double side break type, equipped with motorized drive or single phase, single side break type, equipped with motorized drive.	Please confirm double side break type or single side break type? single phase separate control or three phase control together?	Refer to Tender Addendum and Clarification No.6, item no.69
4	10-Section VI-2B- 06-Specifications- Power	Transformer Specifications- 1.25/1.26	=DISPIMG("ID_C9A1B7C47E63435 C85479B99B7307056",1)	Please clarify the no-load losses and load losses	Refer to Tender Addendum and Clarification No. 2, Section III "Evaluation and Qualification Criteria"

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
	Transformer-20230704 55				
5	Volume I - PART 1_20231227_58-59 1	Transformer Specifications-1.21	=DISPIMG("ID_D0EC231FC80F449 9A30F176A209B3AC0",1)	Please clarify the no-load losses and load losses	Refer to Tender Addendum and Clarification No. 2, Section III "Evaluation and Qualification Criteria"
6	04-Section VI-1B_01_General-20231114 33	1.35 Accommodation and Site Storage	The Contractor shall make his own arrangements with regard to accommodation for his expatriate and locally recruited staff during the construction period	Please Clarify Accommodation for locally recruited staff can be replaced by housing allowance	The contractor shall make his own arrangement as stated in Sub-clause 1.35 "Accommodation and Site Storage" of Volume II, Section VI-1B-01.
7				The Bidder understands that PVoC and CoC for any imported goods/ equipment for the Project (including Permanent materials/ Temporally materials/ the Contractor's own equipment) shall be waived and the Employer shall obtain certificate of PVoC waiver. Is the Bidder's understanding correct?	Refer to Tender Addendum and Clarification No. 7 item no. 19.
8	Volume VII of VII PART 3 Section VIII.Particular Conditions (Part A: Contract Data) PC-1	1.16 (A) The Contractor's Liabilities as to the payment taxes and duties	The Value Added Tax (VAT) for implementation of official aid funded project which has to be approved by the Cabinet Secretary for The National Treasury will be exempted.	Please clarify whether VAT imposed in Kenya to be paid by the Contractor to all of subcontractors, suppliers, service providers and expenses in connection with implementation of the Project and indicated in approved Master List shall be exempted and they shall not be required to pay output VAT to KRA.	The subcontractor, supplier, service providers are exempted from VAT for supplies made in connection with implementation of the Project ONLY.
9	Volume VII of VII PART 3 Section VIII.	1.16 (A) The Contractor's Liabilities as to the	Personal income tax on Japanese employees engaged in the implementation of the Project for their personal income derived	Other than immigration bond, permit fee and application fee are imposed on work permit/entry permit applicants. For Japanese staffs, all of charges and fees included but not	Bidders to undertake due diligence from relevant authorities. Any charges and fees required shall be at the Contractor's expense.

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
	Particular Conditions (PC)	payment taxes and duties	from Japanese companies operating as suppliers, contractors and/or consultants for the implementation of the Project ----- No Pay	limited to above shall be exempted. Is the Bidder's understanding correct?	
10	MSEZ-2022-SS-E-002-220-33kV Single Line Diagram & 13-MSEZ-2022-SS-E-011-33kV Switching Capacitor Arrangement			<p>Equipment shown in the SLD (MSEZ-2022-SS-E-002-220) & 33kV Switching Capacitor Arrangement.</p> <ol style="list-style-type: none"> 1. SA not mentioned in GA drawing. 2. CT & VT is not mentioned in the GA drawing. 3. ES only mentioned in the SLD, but DS/ES is mentioned in the SLD. <p>We therefore understand that we have to follow the SLD. Please give confirmation.</p> 	Confirmed. SLD Drawing to be followed.

18

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
					
11	11-MSEZ-2022-SS-E-009-CONTROL PROTECTION INDOOR SWITCHGEAR ROOM ARRANGEMENT		As per Control-Protection Indoor Switchgear Room Arrangement (11-MSEZ-2022-SS-E-009) Future 33KV GIS SWGR. is located at other room.	<p>We understand that the connection between Live & Future panel located at other room is cable connection. Please confirm.</p> 	<p>Future extension as shown in the drawing is space reserved for future switchgear. Provision shall be made for connection between the live and future switchgears through cable link.</p> <p>Note: The GIS Switchgear room is a one open room design without partitions.</p>
12	07-Section-VI-3B-04-Specifications-SF6 Ring Main Unit-20230704	4.4 Requirements iv. Cable Termination	The unit shall be complete with cable boxes and terminals suitable for three core XLPE copper and aluminum cables of up to 300mm ² . The unit supplied with	It is understood that termination suitable for up to 300 Sq.mm is also applicable for all outgoing feeders. Please confirm.	Aluminum cable 300sq.mm is applied to distribution outgoing feeders, but cable specification and suitable termination kits shall be designed by the Contractor.

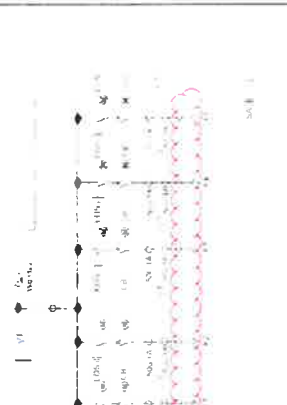
No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
13	07-Section-VI-3B-04-Specifications-SF6 Ring Main Unit-20230704 & SEZ Substation-Typical Arrangement of 33kV Local Substation/Switching Station	VI-3B-04-4 (PDF Pg. 5/12) 4.4 Requirements i. Service conditions ii. Design and Construction	two complete sets of cable terminations (one for immediate connection and the other for spare). The equipment shall be suitable for continuous operation outdoor in tropical area at altitude of up to 1000m above sea level, humidity of up to 90%, average ambient temperature of +30°C with a minimum of 0°C and a maximum +40°C, heavy saline conditions along the coast and isokeraunic levels of up to 180 thunderstorm days per year. & The Ring Main Unit shall be floor mounting type suitable for outdoor and indoor use. The floor fixing shall allow for mounting on a simple plinth with a flat surface.	As per Typical Arrangement of 33kV Local Substation/Switching Station RMU (Refer below snap) is located at inside Building. Hence, we proposed Operation & mounting is suitable for indoor type. Please confirm. 	Confirmed.

18

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
14	02-Section-VI-2A – Scope of Work – Substations - 20230704	A. Electrical Engineering Requirement 1. DONGO KUNDU 220/33kV SUBSTATION 1.5 Storage Batteries, Chargers, DC switchboards and Inverter equipment VI-2A-9 (PDF Pg.10/47)	<p>1. Storage Batteries, Chargers, DC switchboards and Inverter equipment</p> <p>Substation Batteries, Chargers, DC switchboards and Inverter equipment shall be shown on the drawings and specified in the BOM, equipment and materials to be substation including the BOM to be provided to supply the following work:</p> <p>1. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>2. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>3. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>4. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>5. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>6. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>7. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>8. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>9. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>10. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>11. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>12. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>13. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>14. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>15. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>16. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>17. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>18. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>19. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p> <p>20. 220V and 33kV storage battery, charger, DC switchboard and Inverter equipment.</p>	It is also understood that a single UPS can accommodate SACS and other necessary emergency loads. Kindly provide confirmation.	Refer to the Drawing No. MSEZ-2022-SS/E-004, "110V DC Power AND 230V Inverter Supply System.
15	02-Section-VI-2A – Scope of Work – Substations - 20230704	A. Electrical Engineering Requirement 1. DONGO KUNDU 220/33kV SUBSTATION 1.5.3 Inverter System for Substation Automation & Control System (SACS) VI-2A-10 (PDF Pg.11/47)	<p>Inverter System for Substation Automation & Control System (SACS):</p> <p>2 Nos. – Inverter with automatic load transfer facility by means of automatic transfer system, instrument and alarms described in the Specification, faults indicated on the SACS.</p>	Apart from SACS, is any other load required UPS supply. Please clarify.	Refer to the Drawing No. MSEZ-2022-SS/E-004, "110V DC Power AND 230V Inverter Supply System.

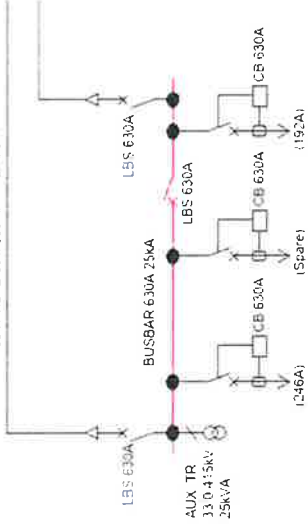
No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
16	02-Section VI-2A-Scope of Work – Substations – 20230704 and 04-Section- Section VI-2B-i: Specifications - Scope and Preliminary General Requirements for Substations VI-A2-45 (46/47) and VI-2B-i-60 (64/64)	2. Training for Employer's Staff Overseas Training Overseas Training The Contractor shall arrange product training on new switchgear, substation automation system, protection relays, power quality analyzer and telecommunication system for Employer's staff (engineers). The training shall take place during the factory assembling of the switchgear and other equipment ordered. Training duration shall be at least <u>Three (3) weeks</u> for each of the switchgear, substation automation system, protection relays and telecommunication system training and the Contractor to propose training duration for the power quality analyzer. The training shall contain the theoretical and practical (hands-on training is preferred) sessions. During the training the trainees shall be able to view, work on at least the assembling, final adjustments and factory testing/inspection. The Employer shall approve the Contractor's proposal for the training program. <u>Four (4) engineers</u> of the Employer will participate in each of the above training (based on 1/10 lecturers) VI-2A-45	The requirement of the duration in those two separate RFQ are not the same. Kindly specify the requirement is three (3) weeks with 4 engineers or two (2) weeks with 10 engineers?	Refer to Tender Addendum and Clarification No.2	

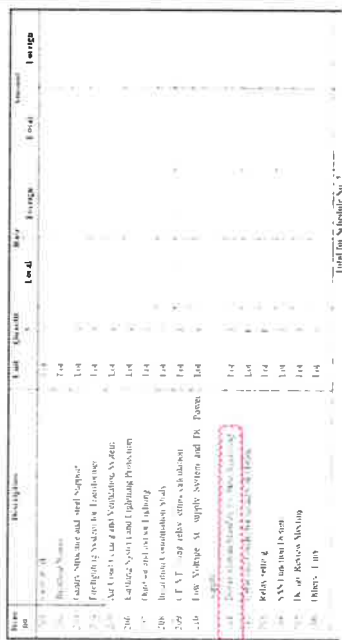
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No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO																																							
		<p>6 weeks prior to the training the training content and schedule shall be submitted to the Engineer for approval.</p> <table border="1" data-bbox="399 896 798 1120"> <thead> <tr> <th>Item</th> <th>Description</th> <th>Duration (Weeks)</th> <th>No. of Participants</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>11k Substation Electrical Design</td> <td>2</td> <td>10</td> </tr> <tr> <td>2</td> <td>11k Substation Operation and Maintenance</td> <td>2</td> <td>10</td> </tr> <tr> <td>3</td> <td>Control and Protection</td> <td>2</td> <td>10</td> </tr> <tr> <td>4</td> <td>Telecommunication</td> <td>2</td> <td>10</td> </tr> <tr> <td>5</td> <td>Substation Automation System</td> <td>2</td> <td>10</td> </tr> <tr> <td>6</td> <td>Substation Civil Engineering</td> <td>2</td> <td>10</td> </tr> <tr> <td>7</td> <td>Transmission line design civil engineers training</td> <td>2</td> <td>10</td> </tr> <tr> <td>8</td> <td>Transmission line design electrical engineers training</td> <td>2</td> <td>10</td> </tr> <tr> <td>9</td> <td>Power System Studies</td> <td>2</td> <td>10</td> </tr> </tbody> </table>	Item	Description	Duration (Weeks)	No. of Participants	1	11k Substation Electrical Design	2	10	2	11k Substation Operation and Maintenance	2	10	3	Control and Protection	2	10	4	Telecommunication	2	10	5	Substation Automation System	2	10	6	Substation Civil Engineering	2	10	7	Transmission line design civil engineers training	2	10	8	Transmission line design electrical engineers training	2	10	9	Power System Studies	2	10		
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7	Transmission line design civil engineers training	2	10																																									
8	Transmission line design electrical engineers training	2	10																																									
9	Power System Studies	2	10																																									
17	4-MSEZ-2022-SS-E-002-220-33kV Single Line Diagram		<p>Dongo Kundu SS - 33kV Surge Arrester is not included in tender SLD (Refer clouded portion in the below snap), SOW & Price schedule for 33kV outgoing feeders (i.e for F1 to F5 and F6 to F10). Our understanding SA is not required for outgoing feeders. Please confirm.</p>	Confirmed.																																								
18	02-Section-VI-3A -Scope of Work- Distribution Network- 20230704		<p>Auxiliary Transformer Vector Group nowhere mentioned the specification as well as in SLD for RMU. Hence confirm the vector group.</p>	Dyn11 to be provided.																																								

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
	<p>Clause 4</p> <p>VI-3A-3 (Pg 4 of 6)</p>	<p>4. 36kV SF₆ Gas Insulated Switchgear</p> <p>4.1</p>	<p>Type 1 (for Industrial Park use: 1 No.) The switchgear is consisted of: -Two (2) Income Feeder with 630A, 25kA Load Break Switch, remote on-off operation -One (1) Bus section with 630A, 25kA Load Break Switch, remote on-off operation -Three (3) Ongoing feeder with 630A, 25kA Circuit Breaker, self-thermal trip circuit, remote on-off operation by 48V DC control supply, with two (2) cable termination -One (1) Auxiliary Transformer, 25 kVA, 33.0/41.5V -Remote terminal unit (RTU) interface with local control center at Dongo Kiundu Station and also controllable at RCC -Live bus, dead bus indication lamps -Two (2) gas-insulated busbars, 1.250A, 25kA with voltage transformer -Cable test facility</p>		
19	<p>07-Section VI-2B-03-Specifications-Disconnectors & Earthing Switches-2023C704</p> <p>Clause 3.2</p> <p>VI-2B-03 – 2 (Pg 3 of 20)</p>	<p>The disconnectors and earth switches shall be provided with motorized and manually operated mechanisms. The motor operation of the disconnectors shall be capable of being controlled from a local or remote point. The motor operation of the earth switches shall be limited to a local point.</p>	<p>As per clause 3.2 (Refer below snap) Earth switch is motorized but in SLD (4-MSEZ-2022-SS-E-002-220-33kV Single Line Diagram) it is without motor. Hence kindly confirm earth switch motor requirement.</p>	<p>Earthing switch shall be provided with hand and motorized driven mechanism.</p>	
20	<p>29-MSEZ-2022-SS-E-026-Grounding Mesh Arrangement-Grounding</p>		<p>As per Grounding Mesh Layout it is understand that Earthing Grid is not required for other empty areas as per layout. Please confirm.</p>	<p>The Contractor shall design based on the IEEE80 practice. The earthing grid will be implemented as per the layout provided in the drawing no. MSEZ-2022-SS-E-026-Grounding Mesh Arrangement-Grounding</p>	

18

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
21	01-MSEZ-2022-DL-E-001-Substation-33kV Distribution System		<p>33kV Distribution System - 33kV Surge Arrester is not included in tender SLD (Refer a.m. snapshot), SOW & Price schedule for 33kV Incomer and outgoing feeders (For 4 Nos. of RMU Local Substation). Our understanding SA is not required for incomer and outgoing feeders. Kindly confirm the point.</p>	<p>Confirmed.</p>	
22	04-Section VI-2B-i- Specifications- Scope and preliminary General Requirements- 20231114 3.2 Power System Studies VI-2B-i-9&10	<p>3.2 Power System Studies During the feasibility study and the preparation of bid documents, preliminary studies were performed to select the key system design and equipment parameters for the interconnection and associated substations. The Contractor should yet review and confirm all these parameters using the latest version of the internationally accepted software package electromagnetic transient program "PSCAD" or other approved program.</p>	<p>In our purview, we have taken protection coordination study complete with detailed relay setting calculation and reviewing and confirming the preliminary studies into consideration.</p> <p>Other than this,</p> <ol style="list-style-type: none"> are any more power system studies—such as load flow, short-circuit studies— necessary? Is the scope (target) only for Dongo Kundu new 220kV Substation inclusive 33kV distribution system? May we have the result of the preliminary studies before the bid closing date? 	<ol style="list-style-type: none"> Refer to sub-clause 3.2 of VI-2B-i-9 & 10 for studies to be conducted. Refer to sub-clause 3.2 of VI-2B-i-9 & 10. Target area is Dongo Kundu new 220kV Substation and 33kV distribution system Concerned data to be shared to the successful bidder. 	
23	Volume I – Part 1 20231227 3.2 Power System Studies IV-C2-2 (131/497)		<p>Item 211 Power System Stability for Auto-Reclosing is specified.</p> <ol style="list-style-type: none"> Dose the requirement link to the "Power System Studies" as clarified by Item 6 in the clarification list? 	<ol style="list-style-type: none"> Clarification not clear. This will be applicable for both 220kV Mariakani and Dongo Kundu Circuit Breakers. 	

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
		<p>Schedule No. 2: Design</p> 		<p>2. In case the item 211 is independent from the "Power System Studies", dose it requests for auto-reclosing of 220kV CB for Dongo Kundu new substation only?</p>	
<p>24</p>	<p>3-Section VI-2B-26 - Specifications- Breaker Switch Capacitor Banks – 20230704</p> <p>And</p> <p>31-MSEZ-2022-SS-E-029- Protection Single Line Diagram for 33kV</p> <p>26.21.3 Double Wye Unbalanced Protection</p>	<p>Double Wye Unbalanced Protection The voltage transformer should be rated for system voltages Ph-Ph and will be connected between the two neutrals of the protected capacitor bank.</p> <p>The Contractor will submit a calculation base on the number of units in group, number of series group and necessary voltages to produce the alarm and trip of this protection.</p> <p>Alarm on loss of one capacitor unit and trip on loss of that number of individual capacitor units that will cause a group over voltage condition in excess of 10% over rated voltages.</p> <p>The short time power frequency over voltages should be limited to the values on IEEE Std. 18-1980.</p> <p>The Contractor will supply the voltage withstand curve vs time of the supplied capacitor unit so that this protection will be co-ordinated with this characteristics</p>	<p>At the 33kV side of the 220kV Dongo Kundu station, four capacitor banks are accessible. Neutral current transformer (NCT) for unbalance protection is displayed in the SLD tender.</p> <p>However, the specification (Section-VI-2B, clause: 26.21.3) specifies that a neutral voltage transformer (NVT) be used to protect against unbalance.</p>	<p>Bidder to propose own design.</p> <ol style="list-style-type: none"> 1. Kindly verify the precise requirement 2. Kindly clarify if 60N(Neutral unbalanced current) is necessary. 	

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No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO																																							
Vi-2B-26-9 (10/14)																																												
<p>Vol 1</p> <p>Section III. Evaluation and Qualification Criteria (without prequalification)</p> <p>&</p> <p>Section IV. Bidding Forms</p> <p>1.1.3 Subcontractor for major item of the Works</p>	<p>1.1.3 Subcontractor for major item of the Works</p> <p>Subcontractor shall submit the following documents before the start of the work to comply with the requirements set forth in respect to the Subcontractor in the fields:</p> <table border="1"> <thead> <tr> <th>Item No.</th> <th>Description of Item</th> <th>Minimums to be provided</th> <th>Minimums Requirement</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CVs of the Subcontractor</td> <td>2 CVs of the Subcontractor</td> <td>CVs of the Subcontractor</td> </tr> <tr> <td>2</td> <td>CVs of the Subcontractor's employees</td> <td>CVs of the Subcontractor's employees</td> <td>CVs of the Subcontractor's employees</td> </tr> <tr> <td>3</td> <td>CVs of the Subcontractor's equipment</td> <td>CVs of the Subcontractor's equipment</td> <td>CVs of the Subcontractor's equipment</td> </tr> <tr> <td>4</td> <td>CVs of the Subcontractor's subcontractors</td> <td>CVs of the Subcontractor's subcontractors</td> <td>CVs of the Subcontractor's subcontractors</td> </tr> <tr> <td>5</td> <td>CVs of the Subcontractor's subcontractors' employees</td> <td>CVs of the Subcontractor's subcontractors' employees</td> <td>CVs of the Subcontractor's subcontractors' employees</td> </tr> <tr> <td>6</td> <td>CVs of the Subcontractor's subcontractors' equipment</td> <td>CVs of the Subcontractor's subcontractors' equipment</td> <td>CVs of the Subcontractor's subcontractors' equipment</td> </tr> <tr> <td>7</td> <td>CVs of the Subcontractor's subcontractors' subcontractors</td> <td>CVs of the Subcontractor's subcontractors' subcontractors</td> <td>CVs of the Subcontractor's subcontractors' subcontractors</td> </tr> <tr> <td>8</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' employees</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' employees</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' employees</td> </tr> <tr> <td>9</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' equipment</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' equipment</td> <td>CVs of the Subcontractor's subcontractors' subcontractors' equipment</td> </tr> </tbody> </table> <p>Section III. Evaluation and Qualification Criteria</p> <ul style="list-style-type: none"> Descriptive catalogues and literature on the proposed types of transformers, protective relays, and cooling systems. Type test certificates from an independent testing authority or independently manufacturer. Quality Management System Manual and ISO 9001 certificate of the equipment manufacturer. 	Item No.	Description of Item	Minimums to be provided	Minimums Requirement	1	CVs of the Subcontractor	2 CVs of the Subcontractor	CVs of the Subcontractor	2	CVs of the Subcontractor's employees	CVs of the Subcontractor's employees	CVs of the Subcontractor's employees	3	CVs of the Subcontractor's equipment	CVs of the Subcontractor's equipment	CVs of the Subcontractor's equipment	4	CVs of the Subcontractor's subcontractors	CVs of the Subcontractor's subcontractors	CVs of the Subcontractor's subcontractors	5	CVs of the Subcontractor's subcontractors' employees	CVs of the Subcontractor's subcontractors' employees	CVs of the Subcontractor's subcontractors' employees	6	CVs of the Subcontractor's subcontractors' equipment	CVs of the Subcontractor's subcontractors' equipment	CVs of the Subcontractor's subcontractors' equipment	7	CVs of the Subcontractor's subcontractors' subcontractors	CVs of the Subcontractor's subcontractors' subcontractors	CVs of the Subcontractor's subcontractors' subcontractors	8	CVs of the Subcontractor's subcontractors' subcontractors' employees	CVs of the Subcontractor's subcontractors' subcontractors' employees	CVs of the Subcontractor's subcontractors' subcontractors' employees	9	CVs of the Subcontractor's subcontractors' subcontractors' equipment	CVs of the Subcontractor's subcontractors' subcontractors' equipment	CVs of the Subcontractor's subcontractors' subcontractors' equipment		<p>In general, type tests shall conduct at one time when a newly model will be launched only to the market for verifying all the technical characteristic and data according to the applicable standards such as IEC, in fact worldwide manufacturers are doing only one time per one model.</p> <p>Also the certificate of those type tests are duly valid until as of now so manufacturers are not required to retest regularly.</p> <p>The required models for this project especially for transformers will be very general which are launched over decade, not newly special made. There might be probably type tests that were conducted over 5 years ago.</p>	<p>Refer to Tender Addendum and Clarification No. 8 item no. 9 and Tender Addendum and Clarification No.6 item no.12.</p>
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	BF-19, 20	<p>Section IV - Bidding Form</p> <p>DOCUMENTS & DRAWINGS TO BE SUBMITTED WITH TENDER</p> <p>As a minimum, the following documents & drawings shall be submitted with the Tender</p> <p>A. SUBSTATION WORK</p> <p>a) Proposed plan and section drawings of Dougo Kinohi Substation and Murakami Substation</p> <p>b) Substation</p> <ul style="list-style-type: none"> 1. General Notes 2. General Arrangement 3. Location Plan 4. Foundation Plan 5. Foundation Section 6. Foundation Elevation 7. Foundation Detail 8. Foundation Section 9. Foundation Elevation 10. Foundation Detail <p>c) Transformer</p> <ul style="list-style-type: none"> 1. General Notes 2. General Arrangement 3. Location Plan 4. Foundation Plan 5. Foundation Section 6. Foundation Elevation 7. Foundation Detail 8. Foundation Section 9. Foundation Elevation 10. Foundation Detail 	<p>10-177</p>	<p>The above conditions are applied all of major manufacturers producing equipment / instrument in worldwide power sector market.</p> <p>Kindly clarify what the purpose of requirement "issued less than 5 years old"?</p>	<p>Reply from KETRACO</p>
26	<p>10-Specification VI-2B-06 Power Transformer-20230704</p>	<p>6.22.3 Type Tests</p> <p>6.22.3.1 Temperature Rise Test</p> <p>6.22.3.2 Lightning Impulse Test</p> <p>6.22.4 Special Tests</p> <p>And</p> <p>6.22.4 Special Tests</p> <p>VI-2B-06-25 and 26 (26 and 27/101)</p>	<p>6.22.3 Type Tests</p> <p>6.22.3.1 Temperature Rise Test</p> <p>6.22.3.2 Lightning Impulse Test</p> <p>6.22.4 Special Tests</p>	<p>Our type test performed as per IEC at transformer factory and witnessed by third party on the higher rating of the transformer will meet the KETRACO's QR requirement. It's understood that all requirements in the clauses 6.22.3 and 6.22.4 are not necessary to repeat once again. Kindly confirm our understanding.</p>	<p>Not acceptable.</p>

15

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27	Volume I - PART 1_20231227 1.1.3 Subcontractor for major item of the Works EQC-1 PDF Pg. 55/498	Submission Requirement Submission Requirement <ul style="list-style-type: none"> Supply record Outline drawing, type test certificates issued by independent institution and less than 5 years old, Quality Assurance manual, ISO 9001 certificate or equivalent Short-circuit strength verification as per IEC-60076-5 for the Power Transformer, end-user certificates/letters from the utilities/clients O&M Manual for 33kV GIS and 245kV circuit breakers 		It's understood, KETRACO requirement is only for the calculation report to confirm the short circuit strength. As suggested by factory, SC calculation can be submitted after completion of detail design. Further, as per IEC 60076-1 (Refer below snap), SC test will come under special test not under type test. Whereas KETRACO specification refer SC test as type test. The same to be addressed to KETRACO.	Confirmed.
28	Volume III of VII-PART 2, 04-Section VI-2B-i- Specifications-Scope and Preliminary General	4.28.1 Design Review Meeting	4.28.1 Design Review Meeting	Bidder will quote Design review meeting price as per tender specifications requirement in Price Schedule No. 2: Design - Item no: 215 - Design Review Meeting? Kindly confirm.	Confirmed.

No.	Volume Part / Page	Section / Clause No.	Reference	Clarification	Reply from KETRACO
29	Requirements- 20231114 -4.28 Design Review Meeting, Training, Laptops, Testing and Simulation Kits Volume III of VII- PART 2, 04- Section VI-2B-i- Specifications- Scope and Preliminary General Requirements- 20231114 -4.28 Design Review Meeting, Training, Laptops, Testing and Simulation Kits	VI-2B-i- 59 & VI-2B-i- 60	4.28.1 Training	Also, the design review meeting will be held at contractors' sub-contractor premises i.e. India. Please accept our request? Bidder will quote HV Design Training as per tender specifications page no: VI-2B-i- 60, Please clarify /confirm following, KETRACO to confirm the price for HV design Training will be include in Schedule No. 5: Training -506 - Whole system operation and maintenance at site? Kindly confirm.	Acceptable. Also refer to Tender Addendum and Clarification No. 5, item no. 27. Refer to Tender Addendum and Clarification No. 2.
30	Volume III of VII- PART 202-Section VI-2A-Scope of Work- Substations- 20230704	VI-2A-45 & VI-2A-46	C. OTHER REQUIREMENTS:	As per world bank rates the Per diem allowance for Over Seas Training and FAT (factory Acceptance Test) and HV design training is USD 100 per person / Per day? Please confirm our understanding is correct.	Refer to Tender Addendum and Clarification No. 2.