

Our Ref: KETRACO/PT/045/2023

15th April 2024

Notice to all Bidders.

TENDER ADDENDUM AND CLARIFICATION No. 5 (TAC 5)

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. 5, consisting of nineteen (19) 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. 5 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:

TAC 5

A. Addendum No. 5

The following sections of the bid documents have been amended.

- 220 kV Technical Data Sheets for Busbars and Connections
- Technical Data Sheets for Low Voltage Switchgear.

Handwritten signature: [Signature] - 15/4

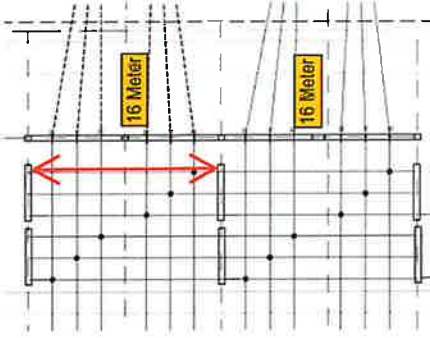
B. Clarification No. 5.

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
1	ITB 11.2 (j) Page BDS-3 Section II. Bid Data Sheet	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.	If prime contractor cannot obtain NCA Class1, we would like to ask you to accept to nominate Kenyan construction company as sub-contractor who has NCA class 1.	The bidder shall not be required to submit documents proving their eligibility for registration with NCA (National Construction Authority) class 1 in Kenya. However, the winning bidder must apply for NCA class 1 registration and submit their certification before commencement date.
2	General ITB14.9 (d) Page BDS-3	(d) As per the Exchange of Note signed between the government of Kenya and Japan, the government of Kenya is responsible for exempting Japanese companies and Japanese employees in the Japanese ODA projects from taxes, including direct taxes as follows: i. Personal income tax on Japanese employees engaged in the implementation of the Project for their personal income derived from Japanese companies operating as suppliers, contractors and/or consultants for the implementation of the Project ----- No Pay ii. Corporate income tax on Japanese companies operating as suppliers, contractors and/or consultants with	We will make all proposal based on bidding Document condition. Please confirm that the Tax exempt condition will not change by end of this project.	See sub-clause 13.7 "Adjustments for changes in Legislation" of Section VII, General Condition (FIDIC).

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
		<p>respect to the income accruing from the supply of products and/or services to be provided under the Loan ----- No Pay [Background]</p> <p>In our standing, Personal Income Tax exemption for JICA project in Kenya is still disputing by Kenyan court.</p>		
3	<p>BF 248 and page no. VI-1B-02-1 Section VI. Employer's Requirements 1B- Specification-Transmission Line -02-Overhead Line Conductors and Section IV Technical Data Sheets</p>	<p>We are unable to find the conductor construction anywhere in IEC as well as in EN, we think the provided total conductor area is, not matching the area of Aluminum and Galvanized steel. As per the BOQ, the conductor is ACSR Canary or its equivalent. However, the parameters mentioned in the technical data sheet are not of ACSR Canary. Deviating the values from the standard.</p>	<p>(a) Please provide the Configuration of conductor in detail and individual strand diameters for aluminum and steel.</p> <p>(b) Also confirm, whether the steel used in conductor is of Galvanized type or Aluminum Cladded steel, as both types mentioned in the customer GTP format.</p>	<p>(a) Bidders to propose a conductor configuration that conforms to the given specifications.</p> <p>(b) Bidders to propose which core conductor to use that will meet the given specifications. Both options are allowed for.</p>
4	<p>Vol 1 Part I BF 49 to BF 54 Section IV Technical Data Sheets</p>	<p>As per tender single line diagram (drg No. MSEZ-2022-SS/E-003) shown 350kVA Auxiliary transformer & Scope and preliminary General technical requirement (Tech Spec - VI-2B-i- Page 14) calls for supply of 2 Nos. of 350kVA Transformer. Whereas technical data sheet 7.5 Auxiliary transformer title calls for 350kVA & Sl. No. 1.15 indicated 250kVA.</p>	<p>Please let us know if it is the 350 KVA or 250 KVA.</p>	<p>Minimum capacity is 350KVA. Auxiliary Transformer Capacity shall be calculated based on station load by the contractor.</p>
5	<p>Vol 1 Part I BF 32-34 Section IV Technical Data Sheets</p>	<p>Strung busbar: Supplier performance not mentioned in the bidding documents.</p>	<p>Please provide.</p>	<p>This is an EPC contract, designed by the contractor.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO																																				
6	Vol 1 Part I BF 20 Section IV. Bidding Forms	Certificates issued by an independent International Organization to ensure compliance with the ISO 9001 / 9002 standards by Bidder and manufacturers.	Please confirm if this ISO applies to Bidder.	Certificate for compliance with ISO 9001 / 9002 standards by the Bidder and manufacturers shall not be a mandatory requirement.																																				
7	Vol. III Page VI-2B-05-5 Section VI-2B : Specifications – Substations : 02 - Insulators, Busbars and Connectors & Dwg No. MSEZ-2022-SS/E- 002, SEZ Substation Single line diagram	220 kV Technical Data Sheets for Busbars and Connections (Data Sheet) 2.5. 220 kV Technical Data Sheets For Busbars And Conn <table border="1" data-bbox="662 1182 890 1547"> <thead> <tr> <th colspan="2">BUSBARS AND CONNECTIONS</th> <th>Unit</th> <th>Required</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>Manufacturer name</td> <td></td> <td></td> </tr> <tr> <td>12</td> <td>Place of manufacturing and testing</td> <td></td> <td></td> </tr> <tr> <td>13</td> <td>Type (flexible or rigid busbar)</td> <td></td> <td>flexible</td> </tr> <tr> <td>14</td> <td>Material</td> <td></td> <td></td> </tr> <tr> <td>15</td> <td>Show rated current rating: 2000A</td> <td>AKS</td> <td>2000</td> </tr> <tr> <td></td> <td>Normal operating temp</td> <td>A</td> <td>25°C</td> </tr> <tr> <td></td> <td>at 40°C</td> <td>A</td> <td>25°C</td> </tr> <tr> <td></td> <td>at 50°C</td> <td>A</td> <td>25°C</td> </tr> </tbody> </table>	BUSBARS AND CONNECTIONS		Unit	Required	11	Manufacturer name			12	Place of manufacturing and testing			13	Type (flexible or rigid busbar)		flexible	14	Material			15	Show rated current rating: 2000A	AKS	2000		Normal operating temp	A	25°C		at 40°C	A	25°C		at 50°C	A	25°C	Nominal rated current for 220kV Busbar is specified as 3150A in the technical data sheet (Clause No. & Page VI-2B-02 - 5) whereas the single line diagram indicated 2000A. Please confirm the actual Nominal rated current whether 3150A (or) 2000A for 220kV Main Busbar.	Nominal rated current shall be 2000A.
BUSBARS AND CONNECTIONS		Unit	Required																																					
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8	<p>Vol. III Page VI-2B-08 - 29 Section VI-2B : Specifications – Substations : 08 - Low Voltage Switchgear & Dwg No. MSEZ-2022-SS-E- 003, SEZ Substation LVAC Power Supply system Electrical</p>	<p>Technical Data Sheets for Low Voltage Switchgear (Data Sheet)</p> <table border="1" data-bbox="470 1254 805 1601"> <tr> <td>1.1</td> <td>LVAC SWITCHBOARD</td> <td></td> <td></td> </tr> <tr> <td>1.2</td> <td>Manufacturer</td> <td></td> <td></td> </tr> <tr> <td>1.2.1</td> <td>Type designation</td> <td></td> <td></td> </tr> <tr> <td>1.2.2</td> <td>Type of switchboard</td> <td></td> <td></td> </tr> <tr> <td>1.2.3</td> <td>Standard</td> <td></td> <td>Medium voltage busbar</td> </tr> <tr> <td>1.2.4</td> <td>Number of years equipment of identical design has been in service</td> <td></td> <td>IEC 61441</td> </tr> <tr> <td>1.2.5</td> <td>Rated current of busbars at 40 °C ambient temperature</td> <td></td> <td>5</td> </tr> <tr> <td>1.2.6</td> <td>Busbar cross section</td> <td></td> <td>A 125A</td> </tr> </table>	1.1	LVAC SWITCHBOARD			1.2	Manufacturer			1.2.1	Type designation			1.2.2	Type of switchboard			1.2.3	Standard		Medium voltage busbar	1.2.4	Number of years equipment of identical design has been in service		IEC 61441	1.2.5	Rated current of busbars at 40 °C ambient temperature		5	1.2.6	Busbar cross section		A 125A	<p>Nominal rated current for 415V LVAC Main Busbar is specified as 1250A in the technical data sheet (Clause No. & Page VI-2B-02 - 5), whereas the single line diagram indicated 1200A for Main bus & 630A for Bus coupler & Incoming feeders. Please confirm the actual Nominal rated current whether 1250A (or) 1200A (or) 630A for 415V LVAC switchboard.</p>	<p>Nominal rated current for 415V LVAC Main Busbar shall be 1200A and 630A for Bus coupler.</p>
1.1	LVAC SWITCHBOARD																																			
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9	<p>Vol. I PART 2 Employer's Requirements BF 28 to 270 Section VI. Employer's Requirements -ER1, Technical Data Sheets, Section IV - BF 28 to 270</p>	<p>Technical Data Sheets</p>	<p>Please note that technical data sheet of each equipment provided in section of technical specification under -Section VI-2B. Whereas Complete technical data sheet provided under Vol. I. PART 2 –Employer's Requirements, Section VI. Employer's Requirements -ER1. Hence please clarify which technical data sheet will be submit along with bid.</p>	<p>Both Technical Sheets are same. The Technical Data Sheets in Volume I Part 1 to be filled and submitted for technical evaluation.</p>																																

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
10	<p>Dwg No. MSEZ-2022-SS-E-006, SEZ Substation -220kV Outdoor Switchgear Arrangement (Plan)</p>	<p>Drawing: 220kV Outdoor Switchgear Arrangement (Plan)</p>  <p>The drawing shows a plan view of a busbar arrangement. It features two main busbars with several cross-arms. Two red double-headed arrows indicate spans of 16 meters between the main busbars. Two yellow boxes labeled '16 Meter' are placed above the arrows. The drawing includes various electrical symbols and dimensions.</p>	<p>220kV Busbar arrangement Please note that 220kV Main bus bar layout arrangement shown 32m span length of Aluminum tubular bus. Whereas long-span suspended tube busbar causes deflection & Aeolian vibrations. Hence please confirm modify the span length 16m tubular busbar instead of 32m (or) otherwise proposed for 220kV Strung busbar.</p>	<p>This is an EPC contract. The contractor shall design accordingly while ensuring compliance to allowable deflection and vibration limits alongside other requisite parameters irrespective of the span lengths.</p>
11	<p>BF-302, 303 Section IV Bidding Forms</p>	<p>Form of Bid Security</p>	<p>We understand that the Bidder / the Bank cannot add any additional condition such as the date of validity on the designated form. Are we right?</p>	<p>The Form of Bid Security shall not be modified; it shall only be filled as indicated in the form.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
12	Section VI-1B 05 Steel Tower Design & 05-Section VI-1B B_02_Overhead Overhead Line Conductor Clause 5.1, 5.13 & 2.7	It's stated in clause 5.1 that "The wind pressure on the steel tower and the insulator sets shall be proposed and filled in the Technical Schedule by the Contractor in accordance with the IEC or ASCE standard." while in the technical schedule clause 5.13 point 2.2 it's stated that "Wind pressure on the projected area of members of one face of the towers and also stated in the technical schedules clause 2.7 point 2.4 that wind pressure on one-and-half times the projected area of members of one face of the towers	Kindly clarify which criteria of wind loading application shall be followed.	The basic wind speed (3 sec gust wind) to be used is 39m/s. Wind pressure shall be calculated based on the provisions of the latest version of IEC 60826 standard.
13	Section V1-1B 05 Steel Tower Design Clause 5.1 & 5.13	In case of follow the standard (IEC and ASCE), kindly provide the following data: * The reliability level . * The return period . * The terrain category.		-Reliability level =1 -Return period = 50 Years -Terrain category = Terrain B as per IEC.
14	05-Section VI-1B_02_Overhead Line Conductor Clause 2.7& Section-V1-1C-Supplementary Information-Transmission Line Table 1.1	It's stated in clause 2.7 that "Minimum temperature of line and earth conductors is 1 °C" while in the supplementary Information- "Minimum ambient temperature -1 °C"	Kindly clarify which value will be used.	Minimum ambient temperature 1 °C

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
15	<p>Section VI-1 B_05_Steel Tower Design 5.13</p> <p>Section-VI-1 C-Supplementary Information- Transmission Line Table 1.1 & the drawings (05-MSEZ-2022-TL-C-004, 06-MSEZ-2022-TL-C-004)</p>	<p>it's stated in technical schedule clause 5.13 point 1.6 page 16/22 that "Earth conductor maximum shielding angle from vertical at tower attachment point over outer line conductors is 30"" while in the supplementary information- "Transmission Line Table 1.1 it's stated that "shielding angle 25"" and in the drawings (05-MSEZ-2022-TL-C-004, 06-MSEZ-2022-TL-C-004) it's mentioned that the shielding angle = 0°</p>	<p>Kindly clarify which value will be used.</p>	<p>Maximum Shielding angle = 0° also indicated explicitly in the tower outline drawings shall apply.</p>
16	<p>VI-2A-45</p> <p>Section VI-2A</p> <p>Scope of Supply of Plant and Installation Services by the Contractor</p> <p>C. OTHER REQUIREMENTS</p> <p>1. Participation in Factory Acceptance Tests</p>	<p>(iv) Reactive Power Compensation Equipment</p>	<p>Kindly confirm that the item (iv) Reactive Power Compensation Equipment is not a scope of the project</p>	<p>See Tender Addendum and Clarification 2 Item no.29.</p>
17	<p>VI-2A-45</p> <p>Section VI-2A</p> <p>Scope of Supply of Plant and Installation Services by the Contractor</p> <p>C. OTHER REQUIREMENTS</p> <p>1. Participation in Factory Acceptance Tests</p>	<p>However for control and protection/SAS, minimum period is 3 weeks.</p>	<p>As mentioned for other equipment, "The period of each FAT will be approved by the employer", kindly accept FAT for control and protection/SAS shall be applied for other equipment. It means standard FAT period will be proposed at execution stage.</p>	<p>See Employers Requirement in Tender Addendum and Clarification 2.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
18	<p>VI-2A-45 Section VI-2A Scope of Supply of Plant and Installation Services by the Contractor</p> <p>C. OTHER REQUIREMENTS 2. Training for Employer's Staff Overseas Training</p>	<p>1.The training shall take place during the factory assembling of the switchgear and other equipment ordered." 2.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 Three (3) weeks 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. 3.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.</p>	<p>1. Kindly specify what product dose "other equipment ordered" expect. 2. Kindly accept standard factory training program. A short training program in a few days will be conducted at the time of FAT 3. Kindly accept to take a factory tour for a few hours during FAT.</p>	<p>See Employers Requirement in Tender Addendum and Clarification 2.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
19	VI-2A-46 Section VI-2A Scope of Supply of Plant and Installation Services by the Contractor C. OTHER REQUIREMENTS 2. Training for Employer's Staff Training at site	Appropriate training shall be provided by the Contractor for ten (10) members of Employer's staff including operators with respect to installation, testing, operation and maintenance of the equipment/system being newly installed. The contractor shall propose a training plan and duration (at least 3 weeks) which shall be subject to Employers approval.	Kindly accept standard site training program which will be proposed after completion of the new Dongo Kundu substation.	Not acceptable.
20	Item No 322/323 Mombasa_SEZ-BOQ and 4-MSEZ-2022-SS-E-002-220-33kV Single Line Diagram	For 220 kV transmission line circuits control and protection for diameter No.1&2, quantity 2 is given in the table. SLD indicate 2x Future line	We understand for the 2x Future Line feeder we are not offering Line Feeder Protection. Hence, only for 2x 220kV Line Feeder Protection to Mariakani 1&2 is required. Please confirm that our understanding is correct?	Confirmed
21	SL 33kV 04-MSEZ-2022-DL-E-004-Local Substation Remote Control Monitoring System	4x 33kV switchgear diagrams connected to RTU	Detailed amount and type of signals to be integrated into the relevant 33kV switchgear substations are required. Signals is mandatory for RTU Hardware configuration. Please provide accordingly.	This should be according to the Contractor's design and should ensure that signals are incorporated in the RTU.

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
22	<p>19.6.2</p> <p>19.8.4</p> <p>22-Section VI-2B-19-Specifications-Fault Monitoring & Alarm System-20230704</p>	<p>19.6.2. Communication with NCC/RCC The communication between the substation and the NCC/RCC Evaluation Station (where available) shall be provided via the Employer's telecommunication networks. Standard communication protocol shall be used.</p> <p>19.8.4. Software At the NCC/RCC evaluation station (where available) similar software as for the substation evaluation station is also required.</p>	<p>At existing NCC/RCC in Kenya was never a similar FMS software installed. It is not an advantage doing it because of different supplier regarding fault monitoring systems in the substations are available with different SW and file format. As per our understanding there is no need for integration of this SW into NCC/RCC and sending of FMS files to NCC/RCC. Please confirm.</p>	<p>See Section VI-2B-19. There is no need for integration of this SW into NCC/RCC and sending of FMS files to NCC/RCC</p>
23	<p>Volume I of VII</p> <p>EQC</p> <p>1.1.1 Personnel</p> <p>The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements</p> <p>EQC-1</p> <p>No. 4</p> <p>Telecommunication/SCADA Engineer &</p> <p>No. 5</p> <p>Protection/Commissioning Engineer</p>	<p>Valid license to practice engineering as a professional engineer in country of origin or residence</p>	<p>Kindly accept engineers are certified by our company, not by country /residence.</p>	<p>Not accepted.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
24	<p>Volume I of VII EQC 1.1.1 Personnel The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements EQC-2</p> <p>Outside column Bottom</p>	<p>The Bidder shall provide details of the proposed personnel for the Contract together with their experience records in Form PER-1 and Form PER-2 in Section IV, Bidding Forms.</p>	<p>Kindly accept that Engineers of sub-vendors Telecommunication/SCADA/Protection commissioning will be assigned after the project contract.</p>	<p>Not accepted.</p>
25	<p>Section VI-2B: Specifications – Substation 15 - Substation Automation & Control System 15.14.1.4 Testing Stages VI-2B-15 – 48 15.14.4 Site Acceptance Testing (SAT) VI-2B-15 - 59</p>	<p>Site Acceptance Tests (SAT) Systems shall pass these tests before they are put into operation and before they are Taken Over After equipment has been erected and connected up on site, the Contractor shall carry out to the satisfaction of the Employer such tests as may be required to prove compliance. with the Specification, independent of any factory tests</p>	<p>Kindly clarify if a contractor conduct “Commission” and “SAT” separately. Because the purpose of commissioning and SAT is the same. In addition, please kindly clarify if the SAT is in line with local regulation or law in Kenya.</p>	<p>Subsystem SAT and System SAT form part of the commissioning. This is KETRACO's commissioning requirement.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
26	EQC -1 Page no. 52 /Section III. Evaluation and Qualification Criteria 1.1.1 Personnel	<ol style="list-style-type: none"> 1. Contractor's Representative / Project Manager 2. Construction Manager – Transmission Line 3. Construction Manager – Substations 4. Telecommunications / SCADA Engineer 5. Protection / Commissioning Engineer 7. Construction Engineers (2 Engineers) <ul style="list-style-type: none"> • Valid license to practice engineering as a professional engineer in country of origin or residence. 	<p>In worldwide practice is, the Authority of Technical body who have issue the certificate for the Eligibility of Candidate for said discipline i.e. Engineer - Electrical is the Valid license in the issuing country and as well as globally acceptable, hence no valid license is required separately for practice engineering. Kindly accept our request.</p>	<p>The regulations of the country of origin or residence of the engineer will be considered.</p>
27	EQC -2 Page no. 56 /Section III. Evaluation and Qualification Criteria 1.1.3 Subcontractor for major item of the Works	<p>Design Subcontractor (Electrical, Civil/Structural)</p> <ul style="list-style-type: none"> • Experience record. • ISO 9001 certificates or equivalent • Completion certificates and/or end-user testimonials/references 	<p>Is it mandatory to propose design Subcontractor during bidding stage?</p>	<p>All subcontractors to be used must be declared at the bidding stage and must comply with the Employer's requirements. In the event that a subcontractor is not proposed, it shall be assumed that the contractor will undertake the works by themselves and the same should be indicated in the schedule of subcontractors. Failure to provide a schedule of subcontractors shall be deemed as non-compliance.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
28	EQC -2 Page no. 56 Section III. Evaluation and Qualification Criteria Electromechanical Works subcontractors	<ul style="list-style-type: none"> • Experience record. • ISO 9001 and 45001 certificates or equivalent • Completion certificates and/or end-user testimonials/references 	Is it mandatory to propose Electromechanical, Works subcontractors during bidding stage?	Same comment of above 27 is applied hereto.
29	EQC -2 Page no. 56 Section III. Evaluation and Qualification Criteria Civil Works subcontractors	<ul style="list-style-type: none"> • Experience record. • ISO 9001 and 45001 certificates or equivalent • Completion certificates and/or end-user testimonials/references 	Is it mandatory to propose Civil, Works subcontractors during bidding stage?	Same comment of above item no. 27 is applied hereto.
30	EQC -3 Page no. 56 Section III. Evaluation and Qualification Criteria Transport and Logistics subcontractor	<ul style="list-style-type: none"> • Experience record. • ISO 9001 certificates or equivalent • completion certificates and/or end-user testimonials/references 	Is it mandatory to propose Transport and Logistics subcontractor during bidding stage?	This is not mandatory. This is left at the discretion of the bidder.

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
31	<p>EQC-1Section III. Evaluation and Qualification Criteria</p> <p>1. Evaluation</p> <p>1.1 Evaluation of Technical Bid</p>	<p>1.1.3 Subcontractor for major item of the Works</p> <p>Item No. 8 ACSR conductor and OPGW</p> <p>Submission Requirement: Type test certificates issued by independent institution and less than 5 years old.</p>	<p>Please clarify that required type test certificates shall be those of the exact same design LL ACSR for this project or not.</p> <p>As LL ACSR conductor for this project is new design suitable to the technical requirements, there is no type test Certificates.</p> <p>Type test certificates for other LL ACSR conductors are available, but date of those certificates is over five years. We would like you to kindly accept for such certificate.</p>	<p>Type test certificates of similar conductors are acceptable but must be less than five years old.</p>
32	<p>EQC-1</p> <p>EQC-1</p> <p>BF-94</p> <p>VI-1B-02-6</p> <p>Section III. Evaluation and Qualification Criteria</p> <p>1. Evaluation</p> <p>Section IV. Bidding Forms / Technical Proposal /</p>	<p>Condition A</p> <p>1.2 Evaluation of Price Bid</p> <p>1.2.1 Other Evaluation Criteria (ITB 35.1(d))</p> <p>(b) Performance Guarantees of the Works</p> <p>Required Performance Guarantees : DC resistance at 20°C (Ω/km)</p> <p>Requirement: Norm: 0.0504 Minimum Acceptable level: N/A Maximum Acceptable level: 0.05544</p> <p>Condition B</p> <p>1.2 Low loss conductor ACSR 550 mm2 DC resistance 20°C Drag Factor</p>	<p>With regards to the above conditions A to D stated in the tender document, please clarify that resistance of conductor (dc) at 20°C shall be 0.0503 ohm/km or 0.0504 ohm/km.</p>	<p>Maximum resistance of conductor (dc) at 20°C shall be 0.0504 ohm/km.</p>

No.	Volume Part / Page Section / Clause No.	Reference	Clarification	Reply from KETRACO
	<p>Schedule of Guarantees</p> <p>1. Functional Guarantees</p> <p>Section IV. Bidding Forms / Technical Proposal</p> <p>Guaranteed Technical Particulars</p> <p>Section VI. Employer's Requirements</p> <p>Overhead Line Conductors</p>	<p>Nominal diameter</p> <p>Tensile strength of core material</p> <p>Condition C</p> <p>12 Technical Schedule overhead Line Conductors</p> <p>3.2.7 Overall diameter of stranded conductor : 29.5 mm</p> <p>3.2.9 Resistance of conductor (dc) at 20°C : 0.0503 ohm/km</p> <p>3.2.13 Tensile strength of core material (Al-clad steel) : 1770 MPA</p> <p>Condition D</p> <p>2.7 Technical Schedule</p> <p>3.2.7 Overall diameter of stranded conductor : 29.5 mm</p> <p>3.2.9 Resistance of conductor (dc) at 20°C : 0.0503 ohm/km</p> <p>3.2.13 Tensile strength of core material (Al-clad steel) : 1770 MPA</p>		
33	<p>EQC-1</p> <p>EQC-1</p> <p>BF-94</p> <p>VI-1B-02-6 Section III. Evaluation and</p>	<p>Condition A</p> <p>1.2 Evaluation of Price Bid</p> <p>1.2.1 Other Evaluation Criteria (ITB 35.1(d))</p> <p>(b) Performance Guarantees of the Works</p> <p>Drag Factor: Requirement : Norm : 0.9</p> <p>Minimum Acceptable level : N/A</p> <p>Maximum Acceptable level : 0.99</p>	<p>To satisfy the Technical Schedule stipulated in the Bid documents, it is required concentric lay stranded formed aluminum wires.</p> <p>And it is also required smooth surface complying for the overall diameter requirement.</p> <p>On the other hands, it is well known that rough surface shall be required to</p>	<p>Bidder to indicate the offered values in the Technical Data Sheets</p>

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	<p>Qualification Criteria</p> <p>1. Evaluation</p> <p>Section IV. Bidding Forms / Technical Proposal / Schedule of Guarantees</p> <p>1. Functional Guarantees</p> <p>Section IV. Bidding Forms / Technical Proposal</p> <p>Guaranteed Technical Particulars</p> <p>Section VI. Employer's Requirements</p> <p>Overhead Line Conductors</p>	<p>Condition B</p> <p>1.2 Low Loss conductor ACSR 550 mm²</p> <p>DC resistance 20°C</p> <p>Drag Factor</p> <p>Nominal diameter</p> <p>Tensile strength of core material</p> <p>Condition C</p> <p>12 Technical Schedule overhead Line Conductors</p> <p>3.2.7 Overall diameter of stranded conductor : 29.5 mm</p> <p>3.2.9 Resistance of conductor (dc) at 20°C : 0.0503 ohm/km</p> <p>3.2.13 Tensile strength of core material (Al-clad steel) : 1770 MPa</p> <p>Condition D</p> <p>2.7 Technical Schedule</p> <p>3.2.7 Overall diameter of stranded conductor : 29.5 mm</p> <p>3.2.9 Resistance of conductor (dc) at 20°C : 0.0503 ohm/km</p> <p>3.2.13 Tensile strength of core material (Al-clad steel) : 1770 MPaV</p>	<p>reduce drag factor less than 1.0. So it is impossible to satisfy the Technical Schedule and required drag factor simultaneously.</p> <p>Please clarify that which has the priority, the Technical Schedule or the drag factor requirement.</p>	

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34	<p>EQC-1 VI-1B-05-9 Section III Evaluation and Qualification Criteria</p> <p>Clause 1.2.1 Other Evaluation Criteria (ITB 35.1(d))</p> <p>Section VI Employer's Requirements 1B-Specification Transmission Line -05-Steel Tower Design</p> <p>Clause 5.1 General (last paragraph) and Clause 5.13 Technical Schedule 2. Assumed Wind Loading</p>	<p>Condition A Required Performance Guarantee Low Loss conductor ACSR 550mm² Drag Factor: Norm 0.9 / Maximum Acceptable Level 0.99</p> <p>Condition B The Bidder shall propose Tower Design according to IEC / ASCE.</p>	<p>Shall the Drag Factor (Norm : 0.9, Maximum Acceptable Level 0.99) for Low Loss conductor ACSR 550mm² apply to the Tower Design proposal by the Bidder?</p>	<p>No. Drag coefficients for the design of respective overhead line components inclusive of support structure i.e. tower shall be as indicated in IEC 60826.</p>

