ZAMBIA – TANZANIA INTERCONNECTOR PROJECT

Package 3

CLARIFICATIONS TO BIDDING DOCUMENTS

NEW RfCs

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
230.	4.20.1	Section VII – Employer's Requirements	Y	Section VII – Employer's Requirements, Clause 4.20.1 As per clause 4.20.1 of Section VII – Employer's Requirements, the tower shall be designed with specified loads with a safety factor of 1.5 for euphorbia critical habitat. We understand that 1.5 factor shall be applied excluding the partial safety factor and load factors given in clause 4.1.5. Please confirm.	Refer to addendum 4 S.No. 1 issued to remove the requirement of towers in the Euphorbia area to have a safety of 1.5 by deletion of the statement "***Towers shall be designed to withstand specified loads with a safety factor of 1.5***" in Section VII – Employer's Requirements, Clause 4.20.1. The safety factors for all towers shall be as provided for in Section VII – Employer's Requirements, Clause 4.1.5
231.	4.20	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements, Clause 4.20 Please provide the quantities of towers comes under Euphorbia region.	Refer to Clarification No.1, RfC S. No. 125
232.		Section X – Contract Forms – Appendix 2 Price Adjustment	N	Section X – Contract Forms Appendix 2 – Price Adjustment	The formula and requirements provided for in Appendix 2 – Price Adjustment of Section X – Contract Forms shall not be altered and shall be applied as provided for

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				As per Appendix 2 – Price Adjustment of Section X – Contract Forms single formula for price adjustment is given. We intend to propose separate formula for each item such as Cement, Aggregate, Aluminium, Structural Steel, Reinforcing Steel, Fuel, Labour etc. which will be easier to calculate the impact of change in indices. For example - In case Conductor $P_1 = P_0 \times (a + b\ Al_1/Al_0 + c\ S_1/S_0) - P_0$ in which: P_1 = adjustment amount payable to the Contractor for Conductor. P_0 = Original Contract price of Conductor (base price) a = Percentage of fixed element in Conductor Contract Price (a = 15%) b = Percentage of Aluminium component in Conductor Price (b = %) c = Percentage of Steel component in Conductor Price (c = %) Al_0, Al_1= Aluminium indices in the country of origin on the base date and the date for adjustment, respectively. S_0, S_1= Steel indices in the country of origin on the base date and the date for adjustment, respectively. Similarly, for other items, we intend to provide separate formula in the above manner.	under Appendix 2 – Price Adjustment of Section X – Contract Forms.

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233.			N	can we fill the schedule 2 with the cement, steel, ballast purchased in Zambia	Confirmed. Refer to ITB 17.5 (b)
234.			N	Earthing 330 kV Double circuit OHTL Supply of material for tower groundings, galvanised steel grounding Rod with 20mm diameter, 0.3mm coating thickness, 1,5m length including CCS40 copper clad steel wire strand 7 No.7 AWG, threaded couplers for earth rods, earthing rod clamps, bolted tower connector clamp, C-tap compression connectors, etc. as specified in Employers Requirements. the copper clad steel wire is not suitable for transmission line, it will be stolen, we suggest to use stranded galvanized steel wire, but the footing resistance will be less than 10 Ω Meeting standard requirements	Earthing conductor shall be CCS40 copper clad steel wire strand 7 No.7 AWG as provided for in the RfB.
235.			N	tower test The BoQ specification mandates type testing for all towers, 17 towers is requested to do type test. the requirement that is unnecessary as it would significantly increase project costs and prolong timelines. Type testing primarily serves to verify the accuracy of design theories or methodologies; therefore, it is recommended to conduct such tests only for one DA suspension tower and one DC angle tower at each 400 kV substation.	As provided under 132kV Price Schedule 4 item 7, 330kV Price Schedule 4 item 15 and 400kV Price Schedule 4 item 13, the tower type test shall be for a total of 17 towers [6 for 132kV towers types, 6 for 330kV towers types and 5 for 400kV tower types].

<table>
<tr><th>S. No.</th><th>Specification Clause</th><th>Document Reference</th><th>Addendum Required [Y/N]</th><th>REQUEST FOR CLARIFICATION ON</th><th>EMPLOYER'S RESPONSE</th></tr>
<tr><td colspan="6"></td></tr>
<tr><td>236.</td><td></td><td></td><td>N</td><td>18.2 The Bidder may express the Bid price in any currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of the Employer's Country.

Based on the currency provisions for bids, bidders may quote bid prices in any currency.

1.Can the bidder use Chinese Renminbi (RMB) as a foreign currency for quotation?

2.If the bidder submits a quotation priced in Chinese RMB as a foreign currency, is ZESCO Limited allowed to make payment to the bidder in Chinese RMB?</td><td>1. The bidder may express the Bid price in any currency as provided for in ITB 18.2
2. For the payments, refer to ITB 18.1 [The currency(ies) of the Bid and the currency(ies) of payments shall be the same]</td></tr>
<tr><td>237.</td><td>4.10.3.5</td><td>Section VII – Employer's Requirements</td><td>N</td><td>4.10.3.5 Wind and Weight Spans
The span criteria used for profiling is given below. Tower designs shall therefore assume the same span criteria:
Table 6 - Tower Design span criteria
<table><tr><th></th><th>400kV</th><th>330kV</th><th>132kV</th></tr><tr><td>Basic Span</td><td>400m</td><td>400m</td><td>250m</td></tr><tr><td>Maximum sum of adjacent spans</td><td>880m</td><td>880m</td><td>700m</td></tr><tr><td>Maximum single span[17]</td><td>600m</td><td>600m</td><td>350m</td></tr><tr><td>Maximum weight span (suspension)</td><td>720m</td><td>720m</td><td>450m</td></tr><tr><td>Maximum weight span (tension)</td><td>900m</td><td>900m</td><td>450m</td></tr><tr><td>Wind/Weight ratio (suspension towers)</td><td>55%</td><td>55%</td><td>55%</td></tr><tr><td>Minimum weight span (tension)</td><td>-200m</td><td>-200m</td><td>-150m</td></tr></table>
4.10.3.5 Wind and Weight Spans

As per this clause the wind and the weight span criteria is given for the Suspension tower, Kindly clarify the ratio for the Tension tower.</td><td>Wind Span/Weight Span ratio for tension towers shall be as per Contractor's design.</td></tr>
</table>

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
238.	2.1.4	Section VII – Employer's Requirements	N	Clause Number 2.1.4 Page No, 278 Section VII – Employer's Requirements 278 **Option:** The loop-in/loop-out of the OPGW can be achieved by stringing the OPGW on the existing 66kV steel towers to the same dome joint, if the structural requirements can be satisfactory confirmed by the Contractor. This option shall be priced in Price Schedule 1 and Schedule 4. The Employer will evaluate bids based on the sum of the base price and the priced option. **2.1.4 Line Design Parameters Summary** To ensure consistency, the following table summarizes key design parameters for all lines, aligned with EN 50341 (Level 3 reliability, 500-year return period) and IEC standards. Climate basis: wind 3s gust 36 m/s at 10m height (q_0=800 Pa), max temp +45°C, min -5°C, seismic MMI VI-VII per EN 1998. Altitude corrections per IEC 60071-2 (Ka=1.08 at 1,600 masl for 330/132kV; 1.16 at 2,200 masl for 400kV, segment-wise). Pollution: Heavy (Class d) for 330/132kV; Very Heavy (Class e) for 400kV to align with TANESCO. 2.1.4 Reliability Level As per this clause the Reliability level I is given as "3", kindly re-confirm the same, as per the other international standard the reliability level "3" to be adopted for the not tested tower such as River Crossing and Long span.	Refer to Clarification No.1, RfC S. No. 106
239.	4.1.3	Section VII – Employer's Requirements	N	Clause Number 4.1.3 Page No, 318 **4.1.3 Climatic Data** While the detailed overhead transmission line design parameters are given in the Technical Schedules under General Requirements, the representative climatic conditions to be used for the transmission lines design shall be as follows: Description: Minimum ambient temperature; Units: °C; Value: -1 Average daily temperature; °C; 25 Maximum ambient temperature; °C; 45 Wind speed*; m/s; 36 Keraunic levels (average ground flashes/km² / year); No/km²/year; 38 * Wind speed is given as 3-second gust under terrain category B of IEC 60826:2017. This can be equated to a VRB wind speed value of 25.9m/s (10-minute mean) under the IEC 60826 wind load methodology. 4.1.3 Minimum ambient Temperature	Refer to Section VII - Employers Requirement subsection 2.1.4 Line Design Parameters Summary of the amended RfB and re-issued as **ZTIP_RfB_Kasama-Nakonde_OHL_Package_3_Rev04_14082026**

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				As per the clause 4.1.3 Minimum Temperature is give as -1 Degree C, where as per clause 2.1.4 Minimum Temperature is Given as -5 Degree C, Kindly clarify the Temperature to be adopted.	
240.	4.1.2	Section VII – Employer's Requirements	N	Clause Number 4.1.2 Page No, 317 **4.1.2 Clearances** **4.1.2.1 Live Metal-Structure Clearances (Tower Clearances)** The clearances between conductors and tower steel shall be calculated by the Contractor in accordance with standard and design (maximum swing angle 35°). The following shall be used for reference purposes only. **Description** / **Units** / **400kV** / **330kV** / **132kV** Between conductor and tower steel - Still air: m / 3,70 / 2,80 / 1,30 - Maximum swing: m / 2,90 / 2,50 / 1.10 - Maximum Swing Angle: ° / 35 / 35 / 35 4.1.3 Maximum Height To Be Adopted As per the clause 4.1.3, wind pressure to be adopted for the Wind speed of 36 m/s, for calculating the Gust factor for the Conductor and for Tower, Kindly confirm the tower combination (MAX BE +MAX LE) to be adopted to calculate the same and verify the Test tower combination too.	Refer to Section VII - Employers Requirement subsection 4.10.10.1 Tower Testing.
241.	4.10	Section VII – Employer's Requirements	N	Clause Number 4.10 Page No, 353	Anti-cascading towers will be installed every 5 km as provided for in Section VII - Employers Requirement subsection 4.10.1 – General.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				4.10.1 General This specification covers design, shop detailing, test and fabrication of lattice steel transmission towers. The towers shall be double circuit towers with a vertical phase configuration as described under section 4.9.1 General, above. Throughout each line, the same towers (i.e. the identical "tower family") will be used. Self-supporting galvanized lattice structures are required. All transmission line towers dealt within this specification are galvanized lattice steel self-supporting structures with bolted connections. The towers shall be square in plan and all towers shall have an independent foundation for each of the four legs. All materials, designs, details, fabrications and tests shall comply with the requirements described hereafter and on the drawings. All designs and details shall be subject to approval by the Employer. The Employer shall have the right to require the Contractor, without additional cost, to make any changes in designs and details necessary to make the construction conform to the Contract documents. All materials shall be brand new. Any steel member with the trace of a hole filling shall not be used. Step bolts shall conform to ASTM A307 and Structural bolts to ASTM A394. No omission or ambiguity on the Drawings or in this specification will relieve the Contractor from the responsibility of furnishing first class materials and workmanship. Should any inaccuracy be found, any further work done before these discrepancies are corrected shall be at the Contractor's risk. • For the 400kV line double circuit, the family of towers shall consist of six (6) standard structure types as per Table 2. • For the 330kV line double circuit, the family of towers shall consist of eight (8) standard structure types as per Table 3. • For the 132kV line double circuit, the family of towers shall consist of five (5) standard structure types as per Table 4. However, their use depends on actual line profile and routing. Where overall line cost can be optimized with less than five (5) tower types, then some types can be omitted. In general, towers can be omitted whenever a project has less than three angle towers of any given type. When a tower is omitted, the next strongest tower in the family shall be used if the tower is compatible with the utilization. The 0° - 10° angle tower type will be used for line deviations as well as for anti-cascading towers. Anti-cascading towers will be installed every 5 km. 4.10 Anticascading Tower As per the clause 4.10, Anticasacding Tower to be provide at every 5 km, we proposed to adopt the range from 5km to 5.5km as per the profile/site requirement.	
242.	4.10.3.4	Section VII – Employer's Requirements	N	Clause Number 4.10.3.4 Page No, 355 **4.10.3.4 Partial Factors** The partial material factors for lattice steel tower design shall be calculated in accordance with clause 7.3 of IEC 60826. Specifically, the following strength factors (γM) for material strength shall be applied as a minimum: • Steel member of suspension tower: 1.25; • Steel member of angle tower: 1.25; • Steel bolts of tower connection: 1.25. 4.10.3.4 Partial Factor	Refer to the Technical Schedules item 0.7.24 Foundation Load Factors

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				As per the clause 4.10.3.4, Partial safety Factor for the lattice tower being given as per the clause 4.11 Tower Foundation the same being not given, Kindly clarify the same	
243.	4.9.1	Section VII – Employer's Requirements	N	Clause Number 4.9.1 Page No, 351 Section VII – Employer's Requirements 351 4.9 Lattice Steel Towers 4.9.1 General This specification covers design, shop detailing, test and fabrication of the of a family of lattice steel transmission towers, each for 400kV, 330kV and 132kV. The 400kV and 330kV towers shall be double circuit towers with a vertical phase configuration to support two (2) ACSR conductors bundled per phase (twin bundle), one (1) ACS 7/6 AWG aluminium clad steel ground wire (330kV line), one (1) ACSR 95/55 ground wire (400kV line), and one (1) optical ground wire (OPGW). The 132kV towers shall be double circuit towers with a vertical phase configuration to support one (1) ACSR conductor per phase, and one (1) optical ground wire (OPGW). Throughout the line, the same towers (i.e. the identical "tower family") will be used. All transmission line towers dealt with in this specification are galvanized lattice steel self-supporting structures with bolted connections. The towers shall be square in plan and all towers shall generally have an independent foundation for each of the four legs. All materials, designs, details, fabrications and tests shall comply with the requirements described hereafter and on the drawings. All designs and details shall be subject to approval by the Employer. The Employer shall have the right to require the Contractor, without additional cost, to make any changes in designs and details necessary to make the construction conform to the Contract documents. All materials shall be brand new. Any steel member with the trace of a hole filling shall not be used. Step bolts shall conform to ASTM A307 and Structural bolts to ASTM A394. 4.9.1 Bolt Type As per the clause 4.9.1, Structural Bolts to be adopted as per the ASTM A394. Kindly specify the Type (I ,II ,III).	Refer to Clarification No.1, RfC S. No. 17
244.	4.10.3.4	Section VII – Employer's Requirements	N	Clause Number 4.10.3.4 Page No, 355 4.10.3.4 Partial Factors The partial material factors for lattice steel tower design shall be calculated in accordance with clause 7.3 of IEC 60826. Specifically, the following strength factors (γM) for material strength shall be applied as a minimum: • Steel member of suspension tower: 1.25; • Steel member of angle tower: 1.25; • Steel bolts of tower connection: 1.25.	As per IEC 60826, and in line with the LRFD design approach, the equation for structural design is as follows; Load factor γ × effect of limit load Q_t < strength factor ϕ × characteristic strength R_c. The Load factors γ are specified in clause 4.1.5, and the strength factor ϕ is taken as the reciprocal of the safety factors specified in the Technical Schedules under items 0.7.33 to 0.7.35 and 0.7.37 to 0.7.39.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				4.10.3.4 Partial Factors As per clause 4.10.3.4 Partial Factors shall be calculated as per Clause 7.3/IEC 60826 which has formula ØN x Øs x ØQ x Øc. As we understand from IEC 60826, Øc = 1 but other factors are missing hence, we request customer to kindly furnish values of other factors as per IEC 60826 Standard for calculation of Partial Factors viz:- ØN, Øs & ØQ	The partial factors γM and action factors (γF) in clauses 4.1.5 and 4.10.3.4 are derived from BS EN 50341-Table 4.13.1. The design criteria shall be based on IEC 60826.
245.		Section VII – Employer's Requirements	N	Clause Number 4.9.1 Page No, 351 **4.9 Lattice Steel Towers** **4.9.1 General** This specification covers design, shop detailing, test and fabrication of the of a family of lattice steel transmission towers, each for 400kV, 330kV and 132kV. The 400kV and 330kV towers shall be double circuit towers with a vertical phase configuration to support two (2) ACSR conductors bundled per phase (twin bundle), one (1) ACS 7/6 AWG aluminium clad steel ground wire (330kV line), one (1) ACSR 95/55 ground wire (400kV line), and one (1) optical ground wire (OPGW). The 132kV towers shall be double circuit towers with a vertical phase configuration to support one (1) ACSR conductor per phase, and one (1) optical ground wire (OPGW). Throughout the line, the same towers (i.e. the identical "tower family") will be used. All transmission line towers dealt with in this specification are galvanized lattice steel self-supporting structures with bolted connections. The towers shall be square in plan and all towers shall generally have an independent foundation for each of the four legs. 4.9.1 Tower Configuration As per the clause 4.9.1, Tower shall be square in plan, alternatively we propose Rectangular tower for the Suspension and small angle tower to reduce the ROW, Kindly confirm.	Refer to Clarification No.1, RfC S. No. 96
246.		Section VII – Employer's Requirements	N	Clause Number 4.10.3.9 Page No, 357	Refer to Clarification No.1, RfC S. No. 14, and Addendum 2 S. No.3 issued.

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				Section VII – Employer's Requirements 357 Redundant members shall also comply with an everyday stress EDS +2.5 % of EDS and 1.5 kN for the load of a linesman (All members with an angle less than 15° with the horizontal). The minimum thickness of the members for towers shall be: • Principal 6 mm • Secondary 4 mm • Redundant 4 mm • Plates 6 mm or thickness of connecting member plus 2 mm The maximum length of members shall not exceed 12 m. 4.10.3.10 Bolt Design Details 4.10.39. Structural member Thickness and Maximum length of member As per the clause 4.10.3.9 , The structural member thickness and the maximum length of members is not matching with as per the Technical schedule 3 Lattice Steel Towers of "ZTIP Technical Schedules" for the secondary and redundant members. Kindly confirm the thickness to be adopted.	
247.	PS 4	Price Schedules	N	330 kV Kasama-Nakonde Item No- 0.071 Grassing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
248.	PS 4	Price Schedules	N	330 kV Kasama-Nakonde Item No- 0.072 Stone Pitching work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
249.	PS 4	Price Schedules	N	330 kV Kasama-Nakonde	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Item No- 0.073 Rip-rap work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	
250.	PS 4	Price Schedules	N	330 kV Kasama-Nakonde Item No- 0.074 Gabions work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
251.	PS 4	Price Schedules	N	330 kV Kasama-Nakonde Item No- 0.075 Terracing/cribbing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
252.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.07 Appropriate slope or tower footing protection against erosion work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
253.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.071 Grassing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
254.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.072 Stone Pitching work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
255.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.073 Rip-rap work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
256.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.074 Gabions work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
257.	PS 4	Price Schedules	N	132 kV Nakonde-Isoka Item No- 0.075 Terracing/cribbing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
258.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border Item No- 0.07 Appropriate slope or tower footing protection against erosion work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
259.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border Item No- 0.071 Grassing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
260.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border Item No- 0.072 Stone Pitching work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
261.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border Item No- 0.073 Rip-rap work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
262.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.

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				Item No- 0.074 Gabions work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/area.	
263.	PS 4	Price Schedules	N	400 kV Nakonde-Tanzania Border Item No- 0.075 Terracing/cribbing work are mentioned as Lot in the BOQ. Kindly clarify the corresponding quantity/ area.	Refer to Clarification No.1, RfC S. No. 134, and Addendum 2, S. No. 2 issued.
264.	Sr.No 8- Tools & Equipments	Guaranteed Technical Particular	N	The tender specifies particular models/brands for testing instruments such as the Schmidt Concrete Test Hammer, Ultrasonic Pulse Velocity Tester, Rebar Cover Meter, High Frequency Earth Resistance Measuring Instrument (Digital Ground Tester), etc. Kindly confirm whether these specified models are intended only as reference to define the minimum technical and performance requirements. If so, will equivalent equipment from other reputed manufacturers, having equal or superior technical specifications, accuracy, functionality, and compliance with the relevant international standards, be acceptable during execution of the Contract?	Confirmed, these specified models are intended only as reference to define the minimum technical and performance requirements. The proposed tools and equipment must be equivalent or better, and approved.
265.			N	Section II –Bid Data Sheet ITB 11.2 (i) , (b) and Section VII – Employer's Requirements, 10.1 Instructions To Bidders As per Section II – Bid Data Sheet Clause ITB 11.2 (i) , (b) it is stated that "***Technical Particulars/characteristics duly completed and signed by the manufacturer***" However, under clause 10.1 Instructions To Bidders of Section VII – Employer's Requirements it is stated that	Confirmed. Clause 10.1 (ITB) of Section VII – Employer's Requirements continues to apply to bid submission of GTC. Beyond the submitted GTC, bidders must also furnish manufacturer's documentation specified in Section II Bid Data Sheet ITB 11.2 (i), including a Technical Particulars /Characteristics form completed and signed by

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				"***Bidders are required to fill in and sign the attached Schedules of Guaranteed Technical Characteristics***". We understand that, for bid submission, the Bidder is required to submit only the Schedules of Guaranteed Technical Characteristics duly filled in and signed by the Bidder, as per clause 10.1 Instructions To Bidders of Section VII – Employer's Requirements – "***Bidders are required to fill in and sign the attached Schedules of Guaranteed Technical Characteristics***". Kindly confirm that our understanding is correct.	the manufacturer as per Guaranteed Technical Characteristics of the Technical Specifications., per Section II – Bid Data Sheet, ITB Clause 11.2(i)(b). In addition, bidders shall fill in the excel Technical Schedules to be submitted as soft copies only.

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266.	13.2 13.3	Section - VII - General Conditions of Contract	N	We understand Advance and Performance Bank guarantee from a reputable Bank in India, will be acceptable. Please confirm our understanding is correct.	Refer to Clarification No.1, RfC S. No 176
267.	ITB 47	Section I – Instructions to Bidders (ITB), Clause No. 47 - Performance Security	N	According to ITB Clause No. 47, we understand that Insurance Bond issued by an insurance company can be submitted to meet the obligations of Performance Security. Please confirm our understanding is correct.	Refer to Clarification No.1, RfC S. No 176

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
268.	13.2	Section - VII - General Conditions of Contract	N	Advance Payment Security The Bidder wish to understand if an Insurance Bond can be submitted to meet the obligations of Advance Security. Please Confirm.	Refer to Clarification No.1, RfC S. No 176
269.	13.2 13.3	Advance Payment Security & Performance Bank Guarantee	N	The Bidder wishes to understand if Insurance Bond issued from reputable Insurance company in India, against Advance Payment Security & Performance Security will be acceptable to the client. Please confirm.	Refer to Clarification No.1, RfC S. No 176
270.	2.1.4 4.10.3.7 2.1	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 2.1.4 Line Design Parameters Summary, 4.10.3.7 Tower geometry and Technical Schedules, Point No. 2.1 Gabions for erosion protection As per this clause, Transmission Line to be designed with return period of 500 years with Reliability Level 3 as per IEC 60826/EN 50341 Standard. However, as per clause 4.10.3.7 Tower geometry & as per Table No. 2.1 Gabions for erosion protection, it's mentioned that 50 years of return period is to be considered. kindly note that, in the recent Bids in Zambia for 330kV T/L from Mpika – Kasama S/S & from Pensulo to Mpika OHL, we have used 50 years of Return Period as mentioned in the Specification & one of these lines i.e. Mpika – Kasama is connected with our proposed Kasama S/S- Nakonde S/S OHL & is designed with 50 years of Return Period however, if we design the proposed OHL with 500 years of return period with Reliability Level 3, there shall be considerable impact on Tower Weights & Foundation Volumes hence, we request you to please clarify whether 50 years return period can be considered for proposed OHL Designs.	Refer to Clarification No.1, RfC S. No. 106

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
271.	4.1.4	Technical Schedules Section VII - Employers Requirement	N	ZTIP Technical Schedules & Section VII - Employers Requirement, Clause No. 4.1.4 Limiting Tension of Cable As per Specification Clause 4.1.4, following Limiting Tensions are prescribed for Cables: • Final tension with no wind on bare conductor at 25°C, over normal terrain shall not exceed 20% of the rated tensile strength. • Initial tension with no wind on bare conductor at minimum temperature (-1°C) shall not exceed 40% of the rated tensile strength. • Final tension with maximum wind on bare conductor at 15°C shall not exceed 40% of the rated tensile strength. However, as per ZTIP Technical Schedules/0 General/Clause 0.7.19 Load Factors following Limiting Tensions are prescribed for Cables: • Max tension at min temperature (-1 deg C) & no wind pressure ACSR/OPGW/OHGW • Max tension at every day temperature (25 deg C) & no wind pressure ACSR/OPGW/OHGW • Max tension at min temperature (-1 deg C) & full wind pressure ASC/OPGW/OHGW • Max tension at every day temperature (15 deg C) & full wind pressure ASC/OPGW/OHGW Kindly clarify the following: 1. Clarify whether limiting conditions to be considered as per Specification clause 4.1.4 or as per ZTIP Technical Schedules	Refer to Clarification No.1, RfC S. No. 100

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				2. As per Specification clause 4.1.4 Limiting Tension of Cable, Initial tension with no wind on bare conductor at minimum temperature (-1°C) shall not exceed 40% of the rated tensile strength however, as per Technical Schedule it's not clear whether Initial or Final Tension to be considered for No Wind Condition, Please clarify. 3. As per Technical Schedule, Max tension at min temperature (-1 deg C) & full wind pressure ASC/OPGW/OHGW is mentioned for Limiting Tensions however, the same is not indicated in clause no. 4.1.4 Limiting Tension of Cable. Moreover for Tower Loadings, 15 deg Full Wind Condition is to be considered as per Technical Specification hence, we understand that Min Temperature (-1 deg) Full Wind Condition is not applicable as Limiting Tension Condition. Please confirm.	
272.	4.10.7.10	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.10.7.10, Painting of High Towers As per the clause, "Painting of high towers shall be in accordance with Zambia Civil Aviation Authority (ZCAA) requirements", Kindly furnish the height requirement above which Painting is required. Also furnish the Specification for painting with respect to Color, Coat etc.	The Contractor shall consult the Zambia Civil Aviation Authority in these matters. Refer to Section VII - Employers Requirement, Clause No. 4.10.8.1
273.	4.10.7.11	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.10.7.11, High Tower warning light As per the clause," Warning lights on extra high towers shall be in accordance with Zambia Civil Aviation Authority (ZCAA) requirements". Kindly provide details like height of	The Contractor shall consult the Zambia Civil Aviation Authority in these matters. Refer to Section VII - Employers Requirement, Clause No. 4.10.8.1

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				towers above which Warning lights are required. Also furnish the Specification of Warning Lights along with Drawing.	
274.	4.10.2	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.10.2, Table 4 As per Technical Specification, Tower type 132SPEC is required. However technical parameters are not furnished for this tower. Moreover, as per Tower Outline Diagram furnished it appears that tower is designed with Auxiliary Cross Arms. Please confirm. Also, Please furnish design related detail like Wind span, Weight Span, Max Individual Spans, deviation angle limits etc. for this Tower.	According to Contractors Detailed Design.
275.	2.1.4	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 2.1.4 Line Design Parameters Summary As per referred clause no 2.1.4, it's mentioned that, "To ensure consistency, the following table summarizes key design parameters for all lines, aligned with EN 50341 (Level 3 reliability, 500-year return period) and IEC standards. Climate basis: wind 3s gust 36 m/s at 10m height (q_0=800 Pa), max temp +45°C, min -5°C, seismic MMI VI-VII per EN 1998. Altitude corrections per IEC 60071-2". as per above mentioned clause EN & IEC both standards are referred however, Altitude corrections are to be considered as per IEC standards hence, we are considering IEC 60826 for Wind Pressure & Tower Loading Calculations. Please Confirm.	Confirmed. For reliability level, refer to Clarification No.1, RfC S. No. 106
276.	4.1.5	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.1.5 Strength & Safety Factors	Refer to Clarification No.1, RfC S. No. 182 and relevant clauses in BS EN 50341.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				<table><tr><td>Deadweight γG Normal load (N1...Nn)</td><td>Compression 1,2 Uplift 0,9</td></tr><tr><td>Deadweight γG Exceptional load (E1....En)</td><td>Compression 1,2 Uplift 0,9</td></tr><tr><td>Wind γW Normal load (N1.....Nn)</td><td>1.3</td></tr><tr><td>Wind γW Exceptional load (E1....En)</td><td>1</td></tr><tr><td>Conductor tension γC Normal load (N1.....Nn)</td><td>1.3</td></tr><tr><td>Conductor tension γC Exceptional load (E1....En)</td><td>1</td></tr><tr><td>Construction/Maintenance γP Exceptional load (E1.....En)</td><td>1.5</td></tr></table> However, we observe that, the details of N1..Nn, E1..En for Normal, Exceptional & Construction/Maintenance Load Condition are not furnished. We request to kindly provide these details.	
277.	4.1.6	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.1.6 Insulators & Fittings As per Technical Specification clause 4.1.6 Kindly furnish the Factor of Safety/Strength Factor for Insulator/Hardware fitting design for Normal & Broken Wire Condition.	Refer to Section VII - Employers Requirement, Subsection 4.10.3.6 Loads on towers.
278.	4.15.3 4.10.4.1	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.15.3 Erection Procedures & 4.10.4.1 Design, Drawings & Calculations As per Technical Specification clause 4.15.3 & 4.10.4.1, Kindly clarify whether Ladders & Platforms shall be installed on Towers along with Step Bolts. If so, please specify the Tower Heights above which such ladders & platforms shall be installed. We consider step bolt diameter as 16mm. Please confirm.	Refer to Clarification No.1, RfC S. No. 35 and 36

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
279.	4.10.6	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.10.6 Bolts Kindly Confirm whether extra percentage of Bolts & Nuts, Step Bolts to be supplied for 400kV/330kV/132kV Lines.	According to Price Schedule item 18.08 of 132kV; item 21.18 of 330kV and; item 18.14 of 400kV.
280.	5.11.14	Technical Schedules	Y	Technical Schedules, Point No. 5.11 Composite Suspension Insulator 132kV; 5.11.14 - Mechanical Routine Test Load In reference to Technical Schedule Point No. 5.11.14, the Mechanical Routine Test Load for the Composite Insulator is currently indicated as 80 KN. However, based on industry standards and general practice, the appropriate value should be adjusted to 60 KN. We kindly request you to correct this value to 60 KN and provide us with revised Technical Schedules.	Refer to Addendum 4 S. No. 2 issued to amend the requirement of Technical Schedules items 5.11.14 and 5.12.14 from 80kN to **60kN.**
281.	4.1.2.4 3.8 4.6.4.2	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 4.1.2.4 Vertical Ground Clearances & 3.8 Topography & 4.6.4.2 Insulator Strings As per clause 3.8, we understand that the clearances values specified as per clause 4.1.2.1, 4.1.2.4 & 4.6.4.2 are corresponding to 1600m Design Altitude. Please confirm.	Note that the clearances values specified as per clauses 4.1.2.1, 4.1.2.4 & 4.6.4.2 are not corresponding design altitude level of 1600m for the 330kV and 132kV lines, and 2200m for the 400kV line.
282.	2.7	Section VII - Employers Requirement Price Schedules	N	Clause 2.7 Additional scope of Section VII – Employer's Requirements As per Clause 2.7 Additional scope of Section VII – Employer's Requirements: ***"If necessary, the Contractor shall also be required to:*** • *Divert the line from its original route to avoid building and other obstructions, undertake preliminary*	Kindly refer to Schedule 7 DAYWORK RATES.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				surveys to select the route and a detailed survey, including tower spotting and other relevant engineering, for such diversions for the approval of the Employer. • *Terminate conductors/earth wire and install down-leads on existing double circuit terminal towers if requested.* • *Undertake the design of special foundations in soils (swampy areas) with extremely low bearing capacities which may not be within the specified values of the Specification or fractured non-homogenous rocks.* • *Undertake soil investigations and geotechnical analysis to determine the type of foundations to be provided in special soils such as swamps with very poor properties.* • *Undertake re-spotting of the towers in special soils, if necessary.* • *Construct access roads to towers in such special areas.* *The Contractor should provide the unit rates for such activities and indicate these in the price schedules. Otherwise, all works not itemised in the Price Schedules shall be deemed to be included in the contract price.*" However in Price schedules there is no separate line items for the activities mentioned in Clause 2.7 Additional scope. Kindly provide revised Price Schedule incorporating separate line items for these activities so that the required unit rates can be quoted accordingly.	

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
283.	3.17.23.2	Section VII - Employers Requirement	N	Clause 3.17.23.2 Pre-Commissioning Tests of Section VII – Employer's Requirements As per Clause 3.17.23.2 Pre-Commissioning Tests of Section VII – Employer's Requirements under **Training,** it is stated that ***"Training shall include live line working."*** We understand that the scope of this requirement is limited to providing live line working training to the Employer's personnel and supply of live line working tools, equipment and accessories is not included under this requirement. Kindly confirm.	The contractor shall provide the training as specified in Section VII – Employer's Requirements, Clause 3.17.23.2 Pre-Commissioning Tests and corresponding Price Schedule
284.	3.17.23.2	Section VII - Employers Requirement	N	Clause 3.17.23.2 Pre-Commissioning Tests of Section VII – Employer's Requirements As per Clause 3.17.23.2 Pre-Commissioning Tests of Section VII – Employer's Requirements under **The Test,** it is stated that *" The following additional tests and checks will be carried out during the same 7 day soak test period;* • *Multispectral Aerial Inspection of whole transmission line (Infrared thermal inspection, UV Inspection for Corona and Partial Discharges Detection and Visible Spectrum Inspection)* • *Digital video of the entire aerial inspection* • *Report of every anomaly detected during the inspection* • *Digital visible/UV light photograph, colour thermogram and grey spectrum thermogram images* • *Complete analysis of the anomaly (either thermal, UV or visible)* • *GPS locations of the anomalies".*	The requirements provided for in Clause 3.17.23.2 Pre-Commissioning Tests of Section VII – Employer's Requirements shall stand and is deemed sufficient for bidding purposes.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				From the above requirement, we understand that Contractor is required to perform these inspections and tests during the 7-day soak test period prior to commissioning. However, as per standard industry practice, such comprehensive multispectral aerial inspections are generally carried out during the Defects Liability Period rather than during pre-commissioning. Kindly clarify.	
285.		Section VII - Employers Requirement	Y	Clause 4.11.6.1 Type tests (Design) of Section VII – Employer's Requirements Under clause Clause 4.11.6.1 Type tests (Design) of Section VII – Employer's Requirements it is stated that ***"Each foundation shall be subjected to test loads in order to prove compliance with the ultimate loading conditions".*** We understand that the Contractor is required to perform proof tests at all foundation locations. Kindly confirm.	Refer to Addendum 4 S. No. 1 issued to amend the statement from "*Each foundation shall be..." to "Each Foundation **type** shall be...*" in Clause 4.11.6.1 Type tests (Design) of Section VII – Employer's Requirements.
286.	S. No. 145, 150	Clarifications To Bidding Documents	N	As per the Clarifications to the Bidding Documents, under **S. No. 145**, the Employer's response states: **"0.03A - Construction of access roads complete with the finger access roads from public roads as per Employer's Requirements."** Further, under **S. No. 150**, of Clarifications to the Bidding Documents the Employer's response states: **"Note that the rights of way, and land acquisition and/or land compensation required for the construction of the access roads along the right of way shall be the responsibility of the Employer."**	Note that the rights of way, and land acquisition and/or land compensation required for the construction of the access roads along the right of way shall be the responsibility of the Employer. All working roads (finger roads) is under the responsibility of the Contractor and shall be approved by the Employer.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				We understand client shall do land acquisition/compensation for the construction of finger roads from public roads. Kindly confirm whether our understanding is correct.	
287.	1.2	Section III – Evaluation and Qualification Criteria	N	Section III – Evaluation and Qualification Criteria Clause No. 1.2 - Contractor's Representative and other Key Personnel As per the Clause 1.2, in the table - **Minimum Qualifications for Key Personnel**, Sl. No.10, Position – Geomatic or Surveying Engineer, the details concerning the **Minimum relevant work experience and/or knowledge** – Based on our understanding, minimum work experience mentioned there in is complete in nature and no other additional experience / knowledge is required. S. No. | Position/specialization | Relevant academic qualifications | Years of relevant work experience | Minimum relevant work experience and/or knowledge 10 | Geomatic or Surveying Engineer | Bachelor's Degree in Geomatic Or Survey Engineering | Not less than eight (08) | a) Transmission line survey (GPS, Total station, AutoCAD and GIS software) including route surveying, data collection and analysis. ii) Please confirm our understanding is correct.	Confirmed.
288.	1.2	Section III – Evaluation and Qualification Criteria	Y	Section III – Evaluation and Qualification Criteria Clause No. 1.2 - Contractor's Representative and other Key Personnel As per the Clause 1.2, in the table - **Minimum Qualifications for Key Personnel**, Sl. No.13, Position – Quality control Engineer as QC/QA Manager, the details concerning the **Years of relevant work experience** is not provided. Please share the complete details.	The proposed Candidate needs to present the Qualifications listed for this position and have minimum 5 years' experience. Refer to Addendum 4 S.No. 3 issued to specify the years of relevant work experience for Quality Control Engineer as QC/QA Manager as 5 years in Section III – Evaluation and Qualification Criteria subsection 1.2 Contractor's Representative and other Key Personnel

<table>
<tr><th>S. No.</th><th>Specification Clause</th><th>Document Reference</th><th>Addendum Required [Y/N]</th><th>REQUEST FOR CLARIFICATION ON</th><th>EMPLOYER'S RESPONSE</th></tr>
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<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><th>S. No.</th><th>Position/specialization</th><th>Relevant academic qualifications</th><th>Years of relevant work experience</th><th>Minimum relevant work experience and/or knowledge</th></tr>
<tr><td>13</td><td>Quality Control Engineer as QC/QA Manager</td><td>University degree in Engineering</td><td></td><td>a) Relevant work experience
b) At least three successfully completed transmission line project at voltage level 330 kV
c) At least one of the above project should be international project.
Advantage experience
a) Experience of higher voltage than 330kV</td></tr>
</table>
</td><td></td></tr>
<tr><td>289.</td><td>4.12.9

1.3</td><td>Section VII – Employer’s Requirements

Price schedule – Schedule 3</td><td>N</td><td>Section VII – Employer’s Requirements Clause No. 4.12.9 – Boreholes.
Price schedule – Schedule 3, Item no. 1.3 of Kasama – Nakonde, Nakonde – Tanzania Border and Nakonde – Isoka line
As per the clause 4.12.9 – Borehole, it states that - The Contractor shall provide soil investigation works along the proposed overhead line route, including full soil investigation at least at every overhead line route angle point or section tower, and at appropriate intermediate points as considered necessary, but at a maximum spacing of no more than 2.5km.
Contradicting the above, we note that in the Price Schedule (Schedule 3 – Item No. 1.3) for all three transmission lines, the quantity for Borehole (SPT – Soil Penetration Test) is specified as covering 100% of the line locations, i.e.:
• Kasama – Nakonde Line: 591 Nos.
• Nakonde – Tanzania Border Line: 39 Nos.
• Nakonde – Isoka Line: 40 Nos.
However, as per our understanding of Clause 4.12.9, the number of locations required for SPT should be less than the quantities indicated in the respective price schedules for each line.
In view of the above, we kindly request you to:</td><td>Refer to issued Clarification No. 1, RfC No. 165</td></tr>
</table>

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				1) Confirm our understanding regarding the applicable quantity of SPT locations as per Clause 4.12.9; and 2) Provide the revised/corrected quantities in Schedule 3 to be considered for each transmission line.	
290.	0.6	Price schedule – Schedule 4	N	Price schedule – Schedule 4, Item no. 0.6 of Kasama – Nakonde, Nakonde – Tanzania Border and Nakonde – Isoka line **Price schedule – Schedule 4, Item no. 0.6 – Water and Builder's supply.** Please illustrate the detail scope covered under "Water and Builder's supply" which will enable us to understand the requirements.	Contractor's various initial connection and running costs (Water, Electricity, etc.) when at site.
291.	1.10	Price schedule – Schedule 3	N	Price schedule – Schedule 3, Item no. 1.10 of Nakonde – Isoka 132 KV LILO line With reference to the Price Schedule – Schedule 3, Item No. 1.10, we note that the quantity specified for "Survey, final alignment, tower plotting, preparation of plan and profile drawings, and tower schedule" is indicated as **15 KM**. However, this appears to contradict the total line length of **13 KM** for the Nakonde – Isoka 132 kV LILO line. In this regard, we kindly request you to confirm the correct quantity to be considered for the aforementioned activity to ensure accurate pricing.	Note that the Contractor shall undertake activities as specified on item 1.10 of Survey, final alignment, tower plotting, preparation of plan and profile drawings, and tower schedule for 15km which includes a 2km length for OPGW splicing point.
292.	4.12.7	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements Clause No. 4.12.7 – Special Survey Requirements for the Euphorbia Critical Habitat Area	Refer to Section VII – Employer's Requirements Clause No. 2.3 Overhead Line Scope of Works.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				With reference to Clause 4.12.7 – *Special Survey Requirements for the Euphorbia Critical Habitat Area*, we understand that the LiDAR survey is required only for sensitive areas, specifically within the Euphorbia critical habitat. For the remaining stretches of the transmission line, we understand that general surveying using DGPS is to be carried out. Also, as per our understanding, LiDAR survey is not mandatory. Contractor may use Drone survey or Conventional Surveying with DGPS / Total station for such works for the complete scope as mentioned in the specification. Kindly confirm if our above understanding is correct.	
293.	2.6.3 19.00 21.00	Section VII – Employer's Requirements Price schedule – Schedule 1 and Schedule 4	Y	Section VII – Employer's Requirements Clause No. 2.6.3 - Description of the 132kV double-circuit OHTL 330kV Nakonde Stepdown S/S – Loop-In/Loop-Out on the Isoka - Nakonde town 66kV line Price schedule – item 19.00 of Schedule 1 and item 21.00 of Schedule 4 of Nakonde – Isoka 132 KV LILO line. With reference to Clause 2.6.3 (Point C), we understand that at the T-junction (Tower KIN42) to the existing 66kV line, a joint box is to be installed and connected to a new ADSS cable (48 fibres) of approximately 2 km length along the existing right of way. Further, the ADSS cable is to be mounted on wooden poles and terminated at an existing joint box connected to the existing OPGW on the 66kV line. A suitable 48-fibre joint box is also to be supplied as part of this scope. However, as per the Price Schedule (Schedule 1 – Item No. 19.00 and Schedule 4 – Item No. 21.00) for the Nakonde–Isoka 132 kV LILO line, we understand that only the unit rate is to be provided for the alternative option, i.e.,	Price Schedule 1 – Item No. 19.00 and Schedule 4 – Item No. 21.00 for the Nakonde–Isoka 132 kV LILO line shall be added to the grand summary. Refer to addendum 4 S.No 4 issued to add Price Schedule 1 – Item No. 19.00 and Schedule 4 – Item No. 21.00 of 132kV to Summary.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				loop-in/loop-out of OPGW by stringing OPGW on the existing 66kV steel towers up to the same dome joint, subject to confirmation of structural adequacy by the Contractor. We further understand that during the execution stage, the cost for implementation of the above alternative option will be considered in the total price schedule, provided the feasibility and requirements are duly confirmed by the Contractor. Kindly confirm if our above understanding is correct.	
294.	3.15.1	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements Clause No. 3.15.1 – Office accommodation With reference to Clause 3.15.1 of the tender document, it is specified that a UPS system shall be provided to support the computer system, and that the Contractor shall be responsible for all associated charges and costs. However, upon review of the list of equipment and furniture to be supplied for each office block, it is observed that computers shall be supplied by ZESCO for their engineers / staff and contractor need not to provide the same. Kindly Confirm our understanding is correct.	The contractor shall provide the equipment as provided for in the RfB.
295.	3.15.1 3.15.2	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements Clause No. 3.15.1 – Office accommodation. Clause No. 3.15.2 – Living accommodation. With reference to Clause 3.15.1 of the tender document, it is stated that the Contractor shall provide offices as required by the Employer's supervisory staff for the duration of the contract. The office blocks are to be fully furnished, air-conditioned, sound and weather-proof, and located adjacent to the Works area at a mutually agreed location prior to commencement of works.	Note the Clause 3.15.1 states: The Contractor shall provide at **least one** fully furnished, air-conditioned, ... Note the Clause 3.15.1 states: The Bidder shall include in his tender for the provision, **at his site accommodation at each project area**...

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Further, as per Clause 3.15.2, the Contractor shall be entirely responsible for the accommodation of Employer's personnel and for providing all necessary living facilities. The Bidder is required to include provision for site accommodation at each project area. In light of the above, considering the substantial stretch of the transmission line (approximately 240 km), we seek clarification regarding the following: • The required number of site office blocks to be provided for the Employer's supervisory staff. • The required number and distribution of living accommodations to be arranged across the project areas.	
296.	6	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements Clause No. 6 – Access road With reference to **Clause 6 – Access Road**, it is stated that the Contractor shall construct one common access road along the transmission line, along with branching roads at suitable locations to provide connectivity between the access road and the nearest motorable roads. In this regard, we kindly request you to clarify the **required width of the access road** to be constructed, as the same is not specified in the clause. Also, we understand that required Branch road Compensation cost if any, to reach the ROW corridor from the nearest motorable road is the responsibility of the ZESCO.	Refer to RfC S. No. 145 of issued Clarification No.1 and RfC S. No. 286.
297.	4.12.7	Section VII – Employer's Requirements	N	Section VII – Employer's Requirements Clause No. 4.12.7 – Special Survey Requirements for the Euphorbia Critical Habitat Area	Refer to Clarification No.1, RfC S. No. 125

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				With reference to **Clause 4.12.7**, it is stated that high-precision LiDAR and/or precision GPS shall be utilized to accurately map the location of all *Euphorbia Perplexa Var. Kasamana* outcrops within a 100-meter-wide corridor centered on the proposed line route and within the Contractor's work and access area. In view of the above and for the purpose of accurate costing and planning, we kindly request you to confirm the **total length of the transmission line stretch that falls under such sensitive Euphorbia Critical Habitat Area** to have common understanding.	
298.		Section IV – Bidding Forms – Proposed Subcontractors for Major Items of Plant and Installation Services	N	As per the requirement of Bidding form for list of Proposed Subcontractors for Major Items of Plant and Installation Services. A list of major items of Plant and Installation Services is provided. The following Subcontractors and/or manufacturers are approved for carrying out the items of the Facilities indicated below. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Sub-Clause 19.1, the Contractor is free to submit proposals for Subcontractors for additional items from time to time. No Subcontracts shall be placed with any such Subcontractors for additional items until the Subcontractors have been approved in writing by the Employer and their names have been added to this list of Approved Subcontractors.	Where subcontractors are proposed, the list required by the bidding form shall be submitted with the bid as provided for in Section IV – Bidding Forms – Proposed Subcontractors for Major Items of Plant and Installation Services together with the bid. Where the bidder does not propose sub-contractors for installation services (foundations, tower erection, stringing, etc.) at bidding stage or the bidder intends to carry out foundations, tower erection, stringing or other installation services itself rather than through a subcontractor, it shall state this clearly in its bid. This shall not be a reason for disqualification but affect the overall scoring in line with ITB 32.2.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				In view of the above, we understand that Subcontractors for Installation services such as Foundations, Tower Erection, Stringing works etc can be introduced upon award of contract as well and their deployment for the works shall be strictly after the approval of such subcontractor by the Employer and need not necessary to introduce such subcontractor during bidding process. Please confirm our understanding is correct.	
299.	1.2	Section III – Evaluation and Qualification Criteria	N	Section III – Evaluation and Qualification Criteria Clause No. 1.2 - Contractor's Representative and other Key Personnel With reference to Clause 1.2 - **Minimum Qualifications for Key Personnel**, Sl. No. 10 (Position – **Geomatic/Surveying Engineer)**, it is mentioned that the required academic qualification is a **Bachelor's Degree in Geomatic or Survey Engineering**. We have a substantial pool of experienced Surveying Engineers holding a **Diploma in Survey**, with more than 10 - 15 years of extensive experience in transmission line survey works. These personnel fully meet the required criteria in terms of experience and practical knowledge. In view of the above, we kindly request your confirmation on whether candidates possessing a **Diploma in Survey**, along with the relevant experience, can be considered eligible for the position of Geomatic/Surveying Engineer. Please confirm. <table><tr><th>S. No.</th><th>Position/specialization</th><th>Relevant academic qualifications</th><th>Years of relevant work experience</th><th>Minimum relevant work experience and/or knowledge</th></tr><tr><td>10</td><td>Geomatic or Surveying Engineer</td><td>Bachelor's Degree in Geomatic Or Survey Engineering</td><td>Not less than eight (08)</td><td>a) Transmission line survey (GPS, Total station, AutoCAD and GIS software) including route surveying, data collection and analysis. ii)</td></tr></table>	Information provided is deemed sufficient for bidding purposes.

<table>
<tr><th>S. No.</th><th>Specification Clause</th><th>Document Reference</th><th>Addendum Required [Y/N]</th><th>REQUEST FOR CLARIFICATION ON</th><th>EMPLOYER'S RESPONSE</th></tr>
<tr><td colspan="6"></td></tr>
<tr><td>300.</td><td>1.2</td><td>Section III – Evaluation and Qualification Criteria</td><td>N</td><td>Section III – Evaluation and Qualification Criteria Clause No. 1.2 - Contractor’s Representative and other Key Personnel
With reference to Clause 1.2 – Minimum Qualifications for Key Personnel, Sl. No. 11 (Position – Quantity Surveyor), it is specified that the required academic qualification is a Bachelor’s Degree in Quantity Surveying or related Construction Engineering studies.
In this regard, we kindly request your confirmation on whether candidates holding a Bachelor’s degree in Engineering, along with the requisite relevant work experience and Knowledge, may also be considered eligible for the position of Quantity Surveyor.
Please confirm.
<table>
<tr><th>S. No.</th><th>Position/specialization</th><th>Relevant academic qualifications</th><th>Years of relevant work experience</th><th>Minimum relevant work experience and/or knowledge</th></tr>
<tr><td>11</td><td>Quantity Surveyor</td><td>Bachelor’s Degree in Quantity Surveying
Or
Related Construction Engineering studies.</td><td>Not less than five (05)</td><td>a) Heavy industrial construction
Added advantage experience:
b) Transmission lines construction in energy sector.</td></tr>
</table></td><td>Information provided is deemed sufficient for bidding purposes</td></tr>
<tr><td>301.</td><td>4.11.6.1

#9 – 330 kV Kasama – Nakonde, #5 of 400kV Nakonde – Tanzania Border and #7 of 132kV Nakonde – Isoka line.</td><td>Section VII – Employer’s requirement

Price schedule – Schedule 3</td><td>N</td><td>Section VII – Employer’s requirement, Clause No. 4.11.6.1_Type tests (Design)
Price schedule – Schedule 3, Item no. 9 of 330kV Kasama – Nakonde, Item no. 5 of 400kV Nakonde – Tanzania Border and item 7 of 132kV Nakonde – Isoka line.
With reference to Clause 4.11.6.1_Type tests (Design), it is mentioned that “Design tests shall involve uplift test to ultimate design loadings or to destruction and shall be carried out on class of standard foundation as stated in Schedule of Prices. The type testing schedule of any foundation design shall be completed in advance of any permanent works utilising that design and shall be used in the verification process of the Contractor’s design.”</td><td>Confirmed.</td></tr>
</table>

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				In the revised price schedule, **Schedule 3, Item no. 9 of 330kV Kasama – Nakonde, Item no. 5 of 400kV Nakonde – Tanzania Border and item 7 of 132kV Nakonde – Isoka line.** it is stated that **"**Foundation Design type test to ultimate or destructive for all foundations other than pad and chimney, including mobilization and erection of all test equipment and installation of the standard footing (the number of test specimen shall be the greater of (i) 1% of the total number of foundations and (ii) two (2)." From the above clause and Price schedule item description, we understand that Foundation design test is required for only **rock anchor foundation and Pile foundation** if it is a part of foundation design during execution. And no need to perform any type test on Pad & Chimney type foundations. Please confirm	
302.	#9 – 330 kV Kasama – Nakonde, #5 of 400kV Nakonde – Tanzania Border and #7 of 132kV Nakonde – Isoka line.	Price schedule – Schedule 3	N	Price schedule – Schedule 3, Item no. 9 of 330kV Kasama – Nakonde, Item no. 5 of 400kV Nakonde – Tanzania Border and item 7 of 132kV Nakonde – Isoka line. In the revised price schedule, **Schedule 3, Item no. 9 of 330kV Kasama – Nakonde, Item no. 5 of 400kV Nakonde – Tanzania Border and item 7 of 132kV Nakonde – Isoka line.** it is stated that **"**Foundation Design type test to ultimate or destructive for all foundations other than pad and chimney, including mobilization and erection of all test equipment and installation of the standard footing (the number of test specimen shall be the greater of (i) 1% of the total number of foundations and (ii) two (2)." From above, we understand the quantity of test specimen shall be greater of (i) 1 % of the total number of foundations other than Pad and Chimney and (ii) two (2).	Confirmed.

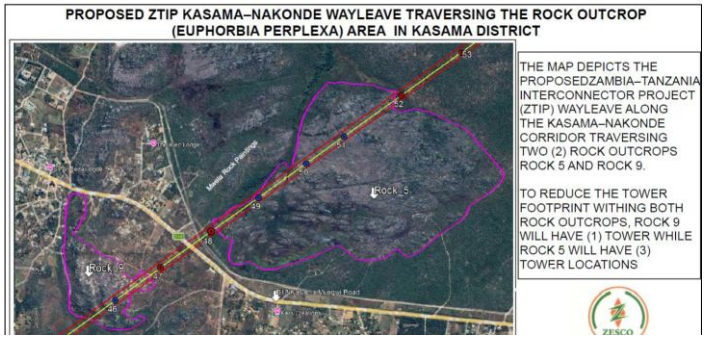
<table>
<tr><th>S. No.</th><th>Specification Clause</th><th>Document Reference</th><th>Addendum Required [Y/N]</th><th>REQUEST FOR CLARIFICATION ON</th><th>EMPLOYER'S RESPONSE</th></tr>
<tr><td colspan="6"></td></tr>
<tr><td></td><td></td><td></td><td></td><td>Please confirm.</td><td></td></tr>
<tr><td>303.</td><td>#0.07 – 330 kV Kasama – Nakonde, 400kV Nakonde – Tanzania Border and 132kV Nakonde – Isoka line.</td><td>Price schedule – Schedule 4</td><td>N</td><td>Price schedule – Schedule 4, Item no. 0.07 of 330kV Kasama – Nakonde, 400kV Nakonde – Tanzania Border and 132kV Nakonde – Isoka line.

With reference to the revised Price Schedule, Schedule 4, Item No. 0.07 for the 330 kV Kasama–Nakonde Line, 400 kV Nakonde–Tanzania Border Line, and 132 kV Nakonde–Isoka Line, it is stated that appropriate slope or tower footing protection against erosion shall be provided for one-third of the total towers.
<table>
<tr><th>Item No</th><th>Description</th><th>Unit</th><th>Qty.</th></tr>
<tr><td>0.00</td><td>Preliminaries 330 kV Kasama-Nakonde OHTL</td><td></td><td>1)</td></tr>
<tr><td>0.07</td><td>Appropriate slope or tower footing protection against erosion for one-third of the total towers</td><td>Lot</td><td>1</td></tr>
<tr><td>0.071</td><td>Grassing</td><td>Lot</td><td>1</td></tr>
<tr><td>0.072</td><td>Stone pitching</td><td>Lot</td><td>1</td></tr>
<tr><td>0.073</td><td>Rip-rap</td><td>Lot</td><td>1</td></tr>
<tr><td>0.074</td><td>Gabions</td><td>Lot</td><td>1</td></tr>
<tr><td>0.075</td><td>Terracing/cribbing</td><td>Lot</td><td>1</td></tr>
</table>
Based on the total tower quantity of 670 towers across all three lines, we understand that slope or tower footing protection may be required for approximately 224 towers.

However, the Price Schedule does not indicate the quantity distribution among the various protection measures covered under Items 0.071 to 0.075. As the cost implications of each protection method may vary significantly depending on site conditions and the type of erosion control measure adopted, it is difficult to price individual item in lot.

We therefore kindly request you to provide the estimated quantity distribution or percentage allocation against each protection type under Items 0.071 to 0.075 for each transmission line, to enable us to appropriately submit a competitive and realistic bid.</td><td>Bidder to estimate quantities based on the provided line profiles and preliminary design for bidding purposes.</td></tr>
</table>

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
304.	1B, 8.13	Price schedule – Schedule 4 Appendix 2 Critical Habitat for The Euphorbia Perplexa Var. Kasamana, In the Mwela Rock Heritage Site_Rev00_15072026 Response to Clarification No. 01, Point No. 125 of Package 3	N	Price schedule – Schedule 4, Item no. 1B, 8.13, 19.23 of 330kV Kasama – Nakonde line. Appendix 2 Critical Habitat for The Euphorbia Perplexa Var. Kasamana, In the Mwela Rock Heritage Site_Rev00_15072026 Response to Clarification No. 01, Point No. 125 of Package 3 With reference to the revised Price Schedule, Schedule 4, Item Nos. **1B, 8.13 and 19.23** of the **330kV Kasama–Nakonde Transmission Line**, separate line items have been introduced for works to be executed within the **Euphorbia Area**, namely: • **Item No. 1B** – Complete installation of all foundations for tower types according to the specification of 330kV Double Circuit OHTL in Euphorbia Area according to Employer's Requirements. • **Item No. 8.13** – Erection and installation of hot dip galvanised lattice steel towers in Euphorbia Area according to Employer's Requirements. • **Item No. 19.23** – Transport, stringing and installation including all joints, sleeves, jumper loops, spacers, necessary dampers, earthing connections and all downleads in Euphorbia Area as per Employer's Requirements. As per the map titled **"Appendix 2 – Critical Habitat for the Euphorbia Perplexa Var. Kasamana in the Mwela Rock Heritage Site (Rev00_15072026)"** and the response to **Clarification No. 01, Sl. No. 125 of Package 3**, we understand that **five towers** are located within the identified Euphorbia Area. The quantities for the above-mentioned items in the price schedule are specified on a Lot basis, we seek confirmation whether the scope under Item Nos. **1B, 8.13 and**	Item No 1B, 8.13 and 19.23 of the 330kV Kasama–Nakonde Transmission Line for the Euphorbia area only. These line items are for additional specialised works with respect to transport, installation of foundations, erection of towers, stringing and installation, etc.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				19.23 is intended exclusively for these **five towers** located within the Euphorbia Area. Accordingly, it is our understanding that the corresponding quantities relating to foundations, tower erection and stringing works for the balance section of the transmission line shall be adjusted in the Price schedule, but it doesn't appear in the revised price schedule. Please review and confirm our understanding is correct and provide the revised price schedule with the corrected quantities.  	
305.	5.10	Technical Schedules Rev01_15072026	N	Addendum No. 2; ZTIP Technical Schedules_Rev01_150720 26; Point No. 5.10 We have noted the revision done in 'ZTIP Technical Schedules_Rev01_15072026' item No. 5.10 - 132kV Composite Insulator String; Sr. No. 5.10.8 - Lightning Impulse withstand Voltage pos/neg corrected from 750 kV to 650 kV. However, as per specification on application of Correction Factor for altitude value of 1600 meter, these values should be :	Values provided in Technical Schedules items 5.10.8 and 5.10.10 are standard insulation levels for 132kV not corrected for altitude. The correction factors provided in 0.1 shall be used.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				<table><tr><th>Parameter</th><th>Value in Revised Technical Schedule</th><th>Corrected Value (Altitude: 1600 m)</th></tr><tr><td>Dry Lightning Impulse Withstand Voltage (kV)</td><td>650</td><td>700</td></tr><tr><td>Wet Power-frequency Withstand Voltage (kV)</td><td>275</td><td>296</td></tr></table> Please clarify whether the above corrected values need to be considered for 132 kV Composite Insulator String.	
306.	0.1.21	Section VII - Employers Requirements Technical Schedules_Rev01_150720 26	N	Section VII - Employers Requirement; ZTIP Technical Schedules_Rev01_150720 26, 0.1-Climatic conditions, Item No. 0.1.21 Safety Factor As per Point no. 0.1.21, Safety factor Ks = 1.05 is provided. Kindly clarify where this factor is applicable/ to be considered	Refer to Clarification No.1, RfC S. No. 20
307.	4.11.3	Section VII - Employers Requirement Tender Clarification No. 1	N	Section VII - Employers Requirement, Clause No. 4.11.3 - Foundation Soil Classification and Tender Clarification No. 1 As per Section VII – Employer's Requirements, Clause No. 4.11.3 Foundation Soil Classification, we shall maintain the design uplift frustum angle values for all soil classes as per note no. 5 other than class 1/Rock Anchor. Please confirm.	Information provided is deemed sufficient for bidding purposes.
308.	4.1.2.1	Section VII - Employers Requirement Tender Clarification No. 1	N	Section VII - Employers Requirement, Clause No. 4.1.2.1 Live Metal Structure Clearances (Tower Clearances) and Tender Clarification No.1 As per this clause Max. Swing Angle of 35 deg considered for all 330kV/400kV/132kV. However, as per clarification no. 1, "The clearances be-tween conductors and tower steel shall be calculated by the Contractor in accordance	Refer to Clarification No.1, RfC S. No. 95

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				with standard and design (maximum swing angle 35°). In this regard, we have following queries: 1) Is it mandatory to restrict the Max Swing Angle to 35 deg by installing Counterweights. Please confirm. If Confirmed, then kindly amend the counterweight quantities mentioned in the Price Schedule. 2) If the Max Swing Angle is exceeding 35 deg without installing Counterweights, is this acceptable. Please Confirm.	
309.	4.1.2.6 4.9.1	Section VII - Employers Requirement Tender Clarification No. 1	N	Section VII - Employers Requirement, Clause No. 4.1.2.6 & Clause 4.9.1 and Tender Clarification No. 1 As per clause 4.1.2.6 & As per Clarification No. 1, Sr. No 181, it's mentioned that, Horizontal Configuration of Conductor to be used for Dead End & Transposition Towers, However, As per Typical Tower Outlines furnished along with Bid Document, the configuration of Dead End Tower is Vertical. Hence, kindly clarify about the configuration of Dead End & Transposition Towers to be used for 330kV Line.	Refer to Clarification No.1, RfC S. No. 181
310.		AMENDMENT No. 2	N	AMENDMENT NUMBER TWO (02) To All Bidders issued 30th July, 2026 With reference to the "ZAMBIA – TANZANIA INTERCONNECTOR PROJECT (ZTIP) – Package 3 – Clarifications to Bidding Documents", we had raised the following clarification on 24 June 2026 under Section VIII – General Conditions of Contract, Clause 14.2(a): *"Please confirm whether custom duty, import VAT and other fees such as inspection fees, customs fees and charges, related levies, etc. (if any) at the time of import*	Refer to GCC 14 Taxes and Duties

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				shall also be borne by the Employer, or whether the exemption will be arranged by the Employer." In the clarifications received on 30th July 2026, the response provided was primarily with respect to the pricing requirements under ITB 17.5, as reproduced below: • **Schedule 1:** Prices shall be based on Site (CIP – Kasama/Nakonde) – refer to ITB 17.5(a). • **Schedule 2:** Prices shall be based on Ex-W (Zambia) – refer to ITB 17.5(b)(i) and (ii). • **Schedule 3:** Prices shall be in line with ITB 17.5(c) and broken down as per Schedule 3. • **Schedule 4:** Prices shall be in line with ITB 17.5(d), including all taxes, duties, levies and charges payable in the Employer's Country, and broken down as per Schedule 4. • **Schedule 5 (Grand Summary):** Refer to Schedule 5. • **Schedule 6:** Prices shall be based on CIP (imported Plant) or Ex-W (locally sourced Plant). • **Schedule 7:** Daywork rates. • Bidders are mandated to provide prices as per ITB 17.5. However, the above response does not specifically clarify the treatment of **customs duty, import VAT and SGS/inspection charges** applicable at the time of import. Accordingly, we request you to specifically confirm the following: 1. Whether **customs duty, import VAT and SGS/inspection charges (if applicable)** in respect of imported Plant/materials will be **borne by the Employer**, or whether the Employer will **arrange and provide the**	

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				necessary exemption certificate(s) to ensure that such charges are not payable by the Contractor. 2. If the above taxes, duties and charges are **not exempted or borne by the Employer**, please confirm whether **we required to consider and include the same in its pricing/bid price**. Accordingly, please confirm whether our understanding that the above import-related taxes, duties and charges will either be **exempted by the Employer or borne by the Employer**, and therefore need not be included in our pricing, is correct. We request your specific confirmation on the above to enable us to appropriately consider the same in our bid pricing.	
311.	4.20	Section VII - Employers Requirement Clarification No. 1	Y	Section VII - Employers Requirement, Clause No. 4.20 Towers for sensitive areas like the Euphorbia critical habitat and Clarification No. 1 As per clause 4.20 & schedule 7.32, We understand that, towers in the Euphorbia Region shall be designed with a safety factor of 1.5. In this regard, please clarify the following: 1) Whether this factor of 1.5 shall be used instead of partial factors (γF) for actions 1.3. If yes then multiplying factor will 1.5X1.25 = 1.875 for normal condition, 1x1.25= 1.25 for exceptional load condition & 1.5x1.5=2.25 for Construction-maintenance condition. Please confirm. 2) Due to different safety factor requirement for Euphorbia region, these tower family will be different as material grade requirement is also different than main line. Hence, please confirm whether tower testing is re-	Refer to RfC S. No. 230 and addendum 4 S. No 1 issued.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				quired for towers in euphorbia region since these towers are not included in tower load testing in item no. 15 of price schedule.	
312.	4.10.3.9 RFC 99	Section VII - Employers Requirement Clarification No. 1	N	Section VII - Employers Requirement, Clause No. 4.10.3.9 Design of Members and Connections and Clarification No. 1 As per clarification no. 1/RFC 99, "The limiting slenderness ratio (L/r) for the family of towers shall be 120 for principal members (legs and main crossarm members) and 200 for secondary members:" likewise, as per same clarification/RFC 185, it's stated that, for tower design due consideration shall be given to ASCE 10-97, Design of Lattice Transmission Structures (and its successor ASCE/SEI 10-15 for the latest design requirements) & which prescribes, Effective Slenderness Ratio values to be used in the Tower Design. Hence, we shall consider Effective Slenderness Ratio (kl/r) in our Designs. Please confirm.	The information provided is deemed sufficient for bidding purposes.
313.	0.7.24	Section VII - Employers Requirement	N	Section VII - Employers Requirement, Clause No. 0.7.24 Foundation Load Factors As per Technical Schedule Clause 0.7.27, Foundation Load Factors are mentioned for conductors and earth wires under maintenance load conditions which seems to be erroneous. Kindly confirm whether our understanding is correct else, please clarify application of this factor in Foundation Design.	Refer to Clarification No.1, RfC S. No. 203

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				<table><tr><td>0.7.24</td><td>Foundation Load Factors:</td><td></td></tr><tr><td>0.7.25</td><td>Concrete</td><td>1.5</td></tr><tr><td>0.7.26</td><td>Reinforcing steel</td><td>1.2</td></tr><tr><td>0.7.27</td><td>Conductors and earthwires under maintenance load conditions</td><td>1.6</td></tr><tr><td>0.7.28</td><td>Soil property at suspension towers</td><td>2</td></tr><tr><td>0.7.29</td><td>Soil property at angle towers</td><td>2.2</td></tr></table>	
314.			N	Section VII - Employers Requirement, Clause No. 4.1.5 Strength & Safety factors As per specification clause no. 4.1.5, it is mentioned that structure partial factors for material strength (γM) and partial factors for actions (γF) are to be considered for tower design. Moreover, it is also mentioned that the contractor shall ensure that the strength coordination provided within the design follows the basic principles as stipulated within IEC 60826. We are considering γM & γF factors as per Cl.4.1.5 for tower design. Please confirm.	The provisions of the RfB Section VII - Employers Requirement, Clause No. 4.1.5 Strength & Safety factors and IEC 60826 shall apply.
315.	5.11.14 5.12.14	Addendum No. 2 Technical Schedules_Rev01_150720 26	Y	Addendum No. 2; ZTIP Technical Schedules_ Rev01_150720 26; Point No. 5.11 Composite Suspension Insulator 132kV; 5.11.14 - Mechanical Routine Test Load and 5.12 Composite Suspension Insulator 132kV; 5.12.14 - Mechanical Routine Test Load In reference to Technical Schedule Point No. 5.11.13, 5.11.14 and 5.12.13, 5.12.14, we see the ambiguity in values for '5.11.13 & 5.12.13 - Mechanical Routine Test Load' and '5.11.14 & 5.12.14 - Related electro-mechanical strength' for the Composite Insulator. The 'Related electro-mechanical strength' is mentioned as 120 KN and 'Mechanical Routine Test Load' is mentioned as 80 KN.	Refer to RfC S. No. 280 and Addendum 4 S. No. 2 issued.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				As per general practice, the appropriate value of 'Mechanical Routine Test Load' should be half of 'Related electro-mechanical strength'. Hence, we request you to either correct value of 'Mechanical Routine Test Load' to value to **60 KN** and maintain 'Related electro-mechanical strength' to 120 KN **OR** correct value of 'Mechanical Routine Test Load' to value to 80 KN and revise 'Related electro-mechanical strength' to **160 KN**. Accordingly we request to revise Technical Schedules.	
316.	5.1.16 5.2.16 5.3.16	Addendum No. 2 Technical Schedules_Rev01_150720 26	N	Addendum No. 2; ZTIP Technical Schedules_ Rev01_150720 26; Point No. 5.1.16, 5.2.16 and 5.3.16 - Dry Impulse withstand voltage Most of the insulator suppliers have stated that Dry impulse withstand voltage of 140 kV for Glass Insulator 120 KN and 145 kV for Glass Insulator 160/210 KN is not possible to achieve. We therefore request you to kindly revisit the values issued in Addendum No. 2.	The Bidder shall include any list of deviations in the list of Technical Schedules.
317.	4.20.1 RFC 6	Section VII - Employers Requirement Clarification 1	Y	Clause 4.20.1 and RFC6 Factor for Euphorbia Location As per Clause 4.20.1 and RFC6 no additional overload factor of 1.5 shall be applied to the towers located outside the Euphorbia area and only the partial safety factor for material and Load factor to be applied. Kindly address and confirm.	Refer to RfC S. No. 230 and addendum 4 S. No 1 issued.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				0.7.31 Lattice Steel Towers: 0.7.32 Worst normal condition 0.7.33 Vertical 1.5 0.7.34 Transverse 1.5 0.7.35 Longitudinal 1.5 **4.20 Towers for sensitive areas like the Euphorbia critical habitat**	Note that the safety provided for in Clause 4:20 applies for the Euphorbia area only. Kindly refer to App1.2.1 - 330kV Kasama – Nakonde Line Profile for towers in the sensitive Euphorbia area.
318.	4.10.3.6 RFC 21	Section VII - Employers Requirement Clarification 1	N	Clause 4.10.3.6 and RFC21 Broken Wire Condition As per the clause 6.6.3.1 IEC 60826 for broken wire case "**any one ground wire or phase conductor broken shall be considered**". Kindly confirm.	The requirements shall be as provided in the RfB for the Double Circuit Configuration
				Section VII - Employer's Requirements; Clause No. 4.10.3.6 1) For security requirements in Tower Loadings (Broken wire condition), it is mentioned that the tension towers shall be checked for Two broken phases/earth-wires broken. We understand that either two phases broken or one phase and one earth-wire broken on the same side and on the same span shall be considered for broken wire condition. Please confirm.	1) Security requirements in Tower Loadings shall be in accordance with IEC 60826. 2) Yes, for all voltage levels 400kV, 330kV and 132kV
319.	4.10.3.6	Section VII - Employers Requirement	N	Clause 4.10.3.6 and RFC25 Swing/Clearances As per the clause 4.10.36 and RFC 25, Calculation of swing angle and clearances carries out as per the BSEN 50341 and the swing angle and clearances values are in	The bidder shall apply BS EN 50341 standard and validate the values provided under Clause 4.10.3.6 as per

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
	RFC 25	Clarification 1		the range of , For 400 KV (Swing 0 degree to 55 degree and clearances is from 2800 mm at still air to 670 mm for extreme wind) , For 330 KV (Swing 0 degree to 57 degree and clearances is from 2800 mm at still air to 580 mm for extreme wind)and For 132 KV (Swing 0 degree to 63 degree and clearances is from 1300 mm at still air to 255 mm for extreme wind). Kindly confirm that the clearances calculated as per BSEN 50341 as stated above to be again multiply by the respective altitude correction factor (1.08 and 1.16) as given in Technical schedule.	design, supply and installation requirement of this tender.
		4.10.3.6	Section VII – Employer's Requirements	N	Section VII - Employer's Requirements; Clause No. 4.1.2.1 Maximum values of swing angle are provided in clause no. 4.1.2.1. We understand that these values of maximum swing only should be considered for checking of tower clearances and tower geometry should be finalized based on this. Kindly clarify similar requirement of swing/clearance under reduced wind condition. Description | Units | 400kV | 330kV | 132kV Between conductor and tower steel - Still air | m | 3,70 | 2,80 | 1,30 - Maximum swing | m | 2,90 | 2,50 | 1.10 - Maximum Swing Angle | ° | 35 | 35 | 35	Yes. The bidder shall optimize tower design in accordance with BS EN 50341.
320.	4.7.9 RFC 15	Section VII - Employers Requirement Clarification 1	N	Clause 4.7.9 and RFC15 Warning sphere spacing As per the clause 4.10.7 and RFC 15, Kindly confirm the spacing (Numbers to be calculated) to be provided on the OHGW/ EW for the 400 kv,330 kv and 132 kv.	The information provided is deemed sufficient for bidding purposes.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Section VII - Employer's Requirements; Clause No. 4.7.9 Aircraft Warning Spheres (Shield Wire Marking Spheres) As per the clause no. 4.7.9, it is mentioned that "warning spheres shall not be fitted on the OPGW." Kindly furnish the drawing showing the arrangement of Warning spheres. Since, 132kV towers are to be fitted with one OPGW only and no other shielding wire, we understand that there is no requirement of warning sphere for 132kV line. Please confirm.	Information provided is deemed sufficient for bidding purposes. There shall be no warnings spheres for 132kV lines.
321.	4.11.2 RFC 74	Section VII - Employers Requirement Clarification 1	N	Clause 4.11.2 and RFC74 Foundation Design Load We understood that the foundation to be design as per the BSEN 1992, Kindly confirm the tower reaction to be considered as the ultimate tower reaction or the tower reaction shall be divided by the respective load/ safety factor adopted during the tower design to convert the ultimate tower reaction to that of working tower reaction.	The bidder shall apply BS EN 1992 standard and validate the values provided under Clause 4.11.2 as per design, supply and installation requirement of this tender.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Section VII – Employer's Requirements, Clause No. 4.11.2 - Design Data As per the Clause, concrete foundations shall be designed in accordance with BS 8110. However, Clause 4.11.4 states that concrete foundations shall be designed in accordance with BS EN 1992. We are assuming BS EN 1992 code for foundation design. Kindly confirm our understanding is correct.	Foundation shall be designed in accordance with BS EN 1992 requirements as provided for in Section VII – Employer's Requirements, Clause No. 4.11.4. Refer to Addendum 2 S.No. 9 issued to replace BS 8110 - Structural use of concrete. Code of practice for design and construction with BS EN 1992 - Design of Concrete Structures in Section VII – Employer's Requirements, Clauses No. 4.11.2 - Design Data; 4.11.9.2 – Steel Reinforcement and 4.13.4.5 - Formwork
322.	1.9.6	Technical Schedule	Y	TDS – 1 Conductors and Cables – 1.9 Overhead Ground Wire / Shield Wire (OHGW) 400kV As per Clause 1.9.6, the required minimum Ultimate Tensile Strength is 80.2 kN, while the required ultimate tensile strength specified in Clause 1.9.11 is 77.8 kN. Please confirm which value shall prevail.	The ultimate tensile strength shall be 77.8kN as provided for in Technical Schedule item 1.9.11 Refer to Addendum 4 S. No. 2 issued to delete Technical Schedule item 1.9.6
323.	1.4 1.5	Technical Schedule	N	TDS 1.4 Optical Ground Wire (OPGW) 400kV TDS 1.5 Optical Ground Wire (OPGW) 330kV & 132kV The lighting class in TDS requires Class 2, as per the OPGW manufacturer, Lightning class 1 is adequate for the actual lightning environment, please confirm Class 1 is also acceptable.	The provisions under TDS 1.4 Optical Ground Wire (OPGW) 400kV and TDS 1.5 Optical Ground Wire (OPGW) 330kV & 132kV shall apply.
324.	4.10 4.10.10.1	Section VII - Employers Requirement	N	Employer's Requirements 4.10 Type and Use of Lattice Steel Towers 4.10.10.1 Tower Testing	The requirements of Section VII clause 4.10.10.1 shall stand: "*All tests shall be carried out to destruction. Any tower destroyed by the test shall not be paid for by the*

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Regarding the load test scheme for the prototype steel tower, we fully acknowledge the specified technical requirements: apply 100% ultimate design load first for sustained load inspection, followed by continuous loading until structural failure occurs. Combined with the test specifications of IEC 60652 and project experience, we put forward the optimized test proposal as follows: All preliminary test procedures will be conducted strictly in compliance with the standard. To begin with, 100% ultimate design load shall be applied. We will maintain the load for observation and carry out a comprehensive inspection to identify any permanent deformation of the structure. Afterwards, the load will be increased stepwise, with the maximum test load capped at 120% of the ultimate design load. If the tower remains intact without structural failure throughout the entire loading process up to 120% ultimate load, this will verify that the steel tower has sufficient safety margin to meet the long-term service requirements of the transmission line. We recommend stopping the loading operation under this condition, rather than continuing to apply load until the tower suffers total collapse. Please kindly confirm whether we may carry out the test in accordance with the above proposal.	*Employer and shall not be used for line construction except otherwise instructed by the Employer.*". Note that all towers shall be tested to failure for the following stated reason in clause 4.10.10.1: "*Following the successful testing of each structure, the Employer will select a maximum of eight (8) members from the tested tower for tensile tests* ***to determine yield and ultimate tensile value****. Ensure these members are suitably and indelibly marked prior to the dismantling of the tower. Should this test show that the steel does not conform to that specified. the engineer/Employer reserves the right to call for re-testing of the tower.*"
325.	18.09	Price Schedules No. 4	N	BOQ Schedule 4 – Item 18.09 BOQ Schedule 4 item 18.09 requires Type Test for Insulator Strings, while as per Employer's Requirement, type test records may be accepted provided that those records and certificates are not older than eight years and tests were carried in accredited laboratory. We understand type	Refer to Clarification No.1, RfC 50.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				test can be omitted provided type test certificate which meet the requirement.	
326.	19.10	Price Schedules No. 4	N	BOQ Schedule 4 – Item 19.10 BOQ Schedule 4 item 19.1 is Type Test for conductors as per Employer's Requirement, while as per Employer's Requirement, type test records may be accepted provided that those records and certificates are not older than eight years and tests were carried in accredited laboratory. We understand, type test can be omitted provided type test certificate which meet the requirement.	Refer to Clarification No.1, RfC 50.
327.	19.11	Price Schedules No. 4	N	BOQ Schedule 4 – Item 19.11 BOQ Schedule 4 item 19.1 is Type Test for OPGW as per Employer's Requirement, while as per Employer's Requirement, type test records may be accepted provided that those records and certificates are not older than eight years and tests were carried in accredited laboratory. We understand, type test can be omitted provided type test certificate which meet the requirement.	Refer to Clarification No.1, RfC 50.
328.	4.10 4.10.10.1	Section VII - Employers Requirements	N	Employer's Requirements 4.10 Type and Use of Lattice Steel Towers 4.10.10.1 Tower Testing As per 4.10.10.1 Tower Testing, The prototype of towers shall be tested in accordance with the following procedures: b) Ensure the fittings at the insulator and shield wire attachment points are, or represent, the actual fittings to be used on the line. However, according to the tower test lab, such actual fittings are not compatible with the loading conditions required for tower testing. The common practice is to adopt	Information provided in the RfB is deemed sufficient for bidding purposes.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				standard test fittings for tower testing. Please confirm standard test fittings can be adopted.	
329.	Ch 3	ESMP	Y	ESMP-Chapter 3 Table 3-2 Management Measures to be Implemented during the Pre-Construction and Construction Phases It requires that Provision for the GRM focal points $75,000 (allowance to the GRM focal points, fuel, and vehicle rental), we understand that the employer is responsible for this cost and shall not included in the bid price. Please confirm.	The Contractor shall be responsible for cost of the Schedule 4 item 25 – MISCELLANEOUS of 330kV Price Schedule. Refer to addendum 4 S.No 4 issued to add Schedule 4 item 25.00 - MISCELLANEOUS with respective sub-items 25.01-25.07 and Schedule 1 item 15.20 of 330kV Price Schedule.
330.	4.8 4.8.3	Section VII - Employers Requirements	N	Employer's Requirements 4.8 Grounding Materials 4.8.3 Counterpoise cable (Earthing Conductors) As per the Employer's Requirements, copper-clad steel strands is required for all earthing conductors. Nevertheless, galvanized steel strands can completely meet the actual service requirements while achieving better cost performance. With comprehensive consideration of practical engineering experience and project economy, we propose to adopt galvanized steel strands instead. Kindly confirm.	Refer to RfC S. No 234.
331.	1.2 – 1.3	Price Schedules No. 3	N	BOQ Schedule 3 – Item 1.2~1.3 As per BOQ Schedule 3 item 1.2 and item 1.3, 591 towers shall conduct both DCPT and SPT, however, based on widely accepted practices in transmission line engineering as well as our experience on similar geological and soil conditions in Zambia, we propose to conduct Dynamic Cone Penetrometer Tests (DCPT) on suspension towers,	Refer to Clarification No.1, RfC 165.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				and Soil Penetration Tests (SPT) on tension towers. This approach optimizes both technical reliability and project schedule. Please confirm.	
332.	4.10.3.9 3.2.20 – 21	Section VII - Employers Requirements Technical Schedules	N	Employer's Requirements 4.10.3.9 Design of Members and Connections TDS 3.2.20~21 According to Clause 4.10.3.9 of Employer's Requirements, the thickness for secondary and redundant members differ from item 3.2.20 and 3.3.21 in TDS. Please confirm whether we should follow the more detailed clause 4.10.3.9 of Section VII – Employer's Requirements.	Refer to Clarification No.1, RfC 14
333.			N	Allowance Does the daily allowance for training and FAT need to be considered by the contractor? If it is needed, please provide the rate for per day.	Refer to Clarification No.1, RfC 58 & 59
334.	Table 4-4	ESMP	N	ESMP Table 4-4 Estimated number of bird diverters per bird habitat sensitivity area Please confirm whether QTY of bird diverter shall be the QTY in Table 4-4 Estimated number of bird diverters	Refer also to updated information as provided in the BMP shared with the bid and provided on the ZESCO website (Table 4.1) https://www.zesco.co.zm/projects.php:
335.			Y	General Due to the delay in the issuance of the clarification responses, a significant number of equipment manufacturers are required to recalculate technical parameters and update their quotations accordingly. In view of the addi-	Refer to Addendum 4, S. No. 5 issued to extend bid submission date to 25 September 2026.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				tional time needed to complete these revisions, we respectfully request that the bid submission deadline be extended by three (3) weeks.	
336.	1.4	Section III – Evaluation and Qualification Criteria	N	Section 1.4 of the RFB mentions the minimum criteria to be met for Subcontractors/Manufacturers. Please refer to the below mentioned for the Steel tower: Regarding the steel tower design requirement highlighted in red, please note that tower design activity requires a professional specialized design firm to be developed. Therefore, we understand that the bidder may engage a professional design subcontractor, that meets the specified tower design experience requirements mentioned in above extract, for the tower design activity. Under this arrangement, compliance with the tower design requirements (highlighted in red) would be demonstrated through the proposed design subcontractor, while compliance with the tower manufacturing, supply and production capacity would be demonstrated through the proposed tower manufacturer. Kindly confirm.	The bidder may engage any subcontractor who meets the required criteria for any parts of the works/facilities as per GCC 19.
337.		Price Schedules No. 4 330 kV	N	ZTIP_400kV Nakonde-Tanzania border_Price Schedules ZTIP_330kV Kasama-Nakonde_Price Schedules ZTIP_132kV Kasama-Nakonde_Price Schedules Price schedule provided for 400/330/132 kV Lines. Please refer below price schedule for 330kV lines.	Leg extension quantities relate only to towers that require extensions per the line profile; towers not requiring extensions are not priced separately in the Price Schedules. The information provided for body and leg extensions is considered sufficient for bidding purposes, and no reconfirmation of quantities or additional typical drawings will be provided.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE

	SUB-TOTAL		
8.00	**Towers 330 kV Twin Bundle Conductor Double Circuit OHTL** **Complete installation of suspension tower 330DA (0° to 2° angle) as defined in the Scope of Works** Erection and installation of hot dip galvanised lattice steel towers according to the design, including stubs, stub extensions, leg extensions, earthing connections, warning and danger plates, bird guard protections, number plates, phase plates, circuit plates, aerial plates, step bolts, all necessary fittings, and all connections to the insulator strings.		
8.01	Type 330DA Tower Basic body and crossarms ± 0 m body extension + 0 m leg extensions	per tower	526
8.02	Type 330DA Tower 3,0 m Body Extension (only)	per tower	67
8.03	Type 330DA Tower 6,0 m Body Extension (only)	per tower	13
8.04	Type 330DA Tower 9,0 m Body Extension (only)	per tower	6
8.05	Type 330DA Tower 12,0 m Body Extension (only)	per tower	1
8.06	Type 330DA Tower 15,0 m Body Extension (only)	per tower	1
8.07	Type 330DA Tower 1,0 m Leg Extension	each	526
8.08	Type 330DA Tower 2,0 m Leg Extension	each	421
8.09	Type 330DA Tower 3,0 m Leg Extension	each	210
8.10	Type 330DA Tower 4,0 m Leg Extension	each	63
8.11	Type 330DA Tower 5,0 m Leg Extension	each	63
8.12	Stubs for Type 330DA tower	each	2104
	SUB-TOTAL		

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Quantity for Type 330DA Tower Basic body and crossarms ± 0 m body extension + 0 m leg extensions is 526.

Total stub quantity mentioned is 2104(526 x 4), which is matches with total quantity of Basic body + 0m body extension + 0m Leg extension.

Now looking at the total quantity of leg extension (526+421+210+63+63 = 1283) is not matching with stub quantities.

The Leg extension quantities for LE + 4m & LE +5m are given equal for all tower types.

In this regard we request you to please reconfirm the quantities shared in price schedule (400/330/132) & also provide typical drawings of Body & Leg extension scheme.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
338.	4.10.3.6	Section VII - Employers Requirements	N	ZTIP_RfB_Kasama-Nakonde_OHL_Package_3 CL. 4.10.3.6 Loads on towers - Broken wire condition As per specification clause 4.10.3.6 mentions broken wire criteria as below. • Torsional Security Loads (cl. 6.6.3.1): Single broken phase/earth wire at 25°C, no wind (Suspension only), • Torsional Security Loads (cl. 6.6.3.1): Two broken phases/earth wires at 25°C, no wind (Tension only), As per reply to clarification no. 01 point number 21 it is mentioned that "Security requirements in Tower Loadings shall be in accordance with IEC 60826." Referring to IEC cl. 6.6.3.1 for broken wire case any one ground wire or phase conductor broken shall be considered. From above we presume that for broken wire condition IEC requirements shall be followed, please confirm.	Refer to Clarification No.1, RfC S. No. 318
339.	4.1.5 4.10.3.4 RFC 6 4.20.1	Section VII - Employers Requirement Clarification 1 Addendum No. 2	Y	ZTIP_RfB_Kasama-Nakonde_OHL_Package_3 With reference to Clause 4.1.5, Clause 4.10.3.4, Clarification No. 01 (Point No. 06), and Addendum No. 02 (Clause 4.20.1), we seek your confirmation on our understanding of the design requirements. Our understanding is as follows: 1.**Material Partial Safety Factor** • As per Clause 4.10.3.4, the partial material safety factor of 1.25 shall be applied to the strength of tower members and bolts for all towers. 2.**Overload Factors (Clause 4.1.5)**	1. Confirmed. Refer to RfC 230 and Addendum 4, S. No. 1 issued. 2. The information provided for foundation design is considered sufficient for bidding purposes.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				• The overload factors specified in Clause 4.1.5 shall be applied to the respective working loads (dead load, conductor tension, wind load, construction/maintenance loads, etc.) for the relevant loading conditions. **330 kV Towers in Euphorbia Region** • As per Clarification No. 01 (Point No. 06) and Addendum No. 02 (Clause 4.20.1), we understand that only Tower Nos. 46 and 49 to 52 (located in the Euphorbia region) shall be designed considering an additional overload factor of 1.5. **Kindly confirm whether the above overload factor of 1.5 shall be:** o *Applied in addition to the overload factors specified in Clause 4.1.5, or* o *Applied in place of the overload factors specified in Clause 4.1.5.* **330 kV Towers in Non-Euphorbia Region** • We understand that all 330 kV towers located outside the Euphorbia region shall be designed only in accordance with the overload factors specified in Clause 4.1.5, together with the material partial safety factor of 1.25 as per Clause 4.10.3.4, and no additional overload factor of 1.5 shall be applied**. Kindly confirm whether the above understanding is correct.** As per the Technical Schedule, the factor for soil properties is specified as 2.0 for suspension towers and 2.2 for tension towers. 0.7.24 **Foundation Load Factors:** 0.7.25 Concrete 1,5 0.7.26 Reinforcing steel 1,2	

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE

0.7.27	Conductors and earthwires under maintenance load conditions	1,6
0.7.28	Soil property at suspension towers	2
0.7.29	Soil property at angle towers	2,2

EN 1997-1:2004 Specifies following Approaches for foundation design Design Approach 1: (Clause 2.4.7.3.4.2)

Design Approach 1 & Combination 1 "A1 + M1 + R1"

Design Approach 1 & Combination 2 "A2 + M2 + R1"

Design Approach 2 "A1 + M1 + R2" (Clause 2.4.7.3.4.3)

Design Approach 3 "A1 + M2 + R3" (Clause 2.4.7.3.4.4)

Partial Factors on Actions (γ_F) Refer Annexure A Table A.3

Actions		Symbol	Set A1	Set A2
Permanent	Unfavourable	γ_G	1.35	1.00
	Favorable		1.00	1.00
Variable	Unfavourable	γ_Q	1.50	1.30

Partial Factors for Soil Parameters (γ_M) Refer Annexure A Table A.4

Soil Parameter	Symbol	Set M1	Set M2
Angle of Shearing Resistance[a]	$\gamma_{\varphi'}$	1.00	1.25
Effective Cohesion	$\gamma_{c'}$	1.00	1.25
Undrained Shear Strength	γ_{cu}	1.00	1.40
Unconfined strength	γ_{qu}	1.00	1.40
Weight Density	γ_{γ}	1.00	1.00

[a] *This Factor applied to tan ø*

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				Partial Resistance Factors for Spread Foundations (γ_R) Refer Annexure A Table A.5 Resistance | Symbol | Set R1 | Set R2 | Set R3 Bearing | γv | 1.00 | 1.40 | 1.00 Sliding | γh | 1.00 | 1.10 | 1.00 Based on the foundation partial safety factors in Technical Schedules and relevant reference standards in technical specification we understand that over all combined factors (γF* γM * γR) shall not be less than 2 for suspension tower and 2.2 for tension tower in any critical design approach. Also, from the above Table A.4 we understand that if density of soil="X", Angle of repose=" y", then the following parameters are to be considered for foundation de-sign. For suspension tower, Soil density ="x" Tangent of angle of repose = "Tan(y)/2.0" For Tension tower, Soil density ="x" Tangent of angle of repose = "Tan(y)/2.2" **Kindly confirm whether our understanding is correct.**	
340.	RFC 212 RFC 214 2.4 4.12.8	Clarification 1 Section VII - Employers Requirements	N	Response to Question No 212 and 214 of Clarification No.1 Section VII – Employer's Requirements / Clause 2.4 – Additional Information. Section VII – Employer's Requirements / Clause 4.12.8 – Geotechnical Investigation. **Basis the given clause and reference please advise on understanding of Contract Basis**	Schedule No. 4. Installation Services shall be paid based on measured value of works. Refer to Appendix 1 – Terms and Procedures of Payment of Section X Contract Forms

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				We have noted that bidder has to quote the unit prices for the quantities provided in the schedule of prices. Kindly confirm the during execution stage : • Contractor shall be paid as per the actual quantities installed multiplied by quoted unit prices in the schedule of prices.	
341.			N	Appendix 2 – Price Adjustment We have noted the Appendix 2 – Price Adjustment given in bid documents. Request your response on the following queries pertaining to Price Adjustment application: • We understand that we can propose separate **Price Adjustment (PA)** formulae for Tower supply, Conductor supply, Earthwire supply, OPGW supply, Civil Works, Erection Works and Stringing works utilizing the given components of Cement, Aggregate, Aluminium, Reinforcing Steel, Structural Steel and Fuel component applicable for the respective formulae for Supplies of Tower, Conductor, Earthwire, OPGW, Civil Works, Erection Works and Stringing works. **Please confirm.** • Please confirm the **Price Adjustment (PA)** Calculation/Invoices can be submitted as per the Payment certificate (Joint measurement certificate) received from Client/Consultant on monthly basis or as per the site timelines. • Please confirm if the Adjustable date for **Price Adjustment (PA) calculation** can be considered as follows:	• Refer to Clarification No.1, RfC 64, 65, 66 & RfC 232 • The Price Adjustment shall be as per Appendix 2: "The amount payable to the Contractor and valued at base rates and prices *in the Payment Certificates issued by the Consultant* shall be adjusted in respect of the rise or fall in the indexed costs of materials and other inputs to the Works as indicated in the Price Adjustment Formula…" • The adjustable date shall be as provided for in Appendix 2: "*The Price Adjustment Date shall be 49 days prior to the day of the last period (to which the particular Payment Certificate relates) in line with Clause 13.8 of the FIDIC (Yellow Book) Conditions of Contract.*"

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				- For Towers : 49 days prior to Shipment / BL date (Applicable Indices) - For Conductor : 49 days prior to Shipment / BL date (Applicable Indices) - For OPGW : 49 days prior to Shipment / BL date (Applicable Indices) - For Civil Works : 49 days prior to Site JMC (Applicable Indices) - For Tower Erection : 49 days prior to Site JMC (Applicable Indices) - For Stringing : 49 days prior to Site JMC (Applicable Indices)	
342.		Technical Schedules	N	We have noted the Design Altitude of 400kV OHL is 2200 masl and for 330kV and 132 kV OHL is 1600 masl. As per Technical schedules of 400kV and 330 kV, we have noted the utilization of number of Glass Insulator discs per string is mentioned: For 400 kV Insulator Strings – 29 discs per string For 330 kV Insulator Strings – 22 discs per string Kindly advise the given number of Glass Insulator discs per string in Technical Schedules for 400kV and 330kV has already taken into consideration of Altitude clearance factor resulting from higher altitude of 1600 masl and 2200 masl. Please confirm.	Confirmed. This has been taken into consideration
343.		Addendum No. 2	N	AMENDMENT NUMBER TWO (02) To All Bidders issued 30th July, 2026; Point no. 08 We have noted your response no. 08 of clarification No. 01 issued on 30th July 2026 stating that Contract Price shall be Lump Sum with price adjustment as provided for PCC	The Contractor shall not unilaterally apply changes to the facilities. Any changes to the facilities shall be subject to the Employer or Project Manager instruction or approval. Where additional quantities result from physical site conditions that could not reasonably have been foreseen, as per GCC Clause 35 - Unforeseen Condi-

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				11.2 and Appendix 2 – Price Adjustment given in Section X – Contract Forms. For further clarity say for a hypothetical situation in 330 KV Kasama – Nakonde OHL item no. 2.01 of Price Schedule – '*Type 330DB Tower Basic body and crossarms ± 0 m body extension + 0 m leg extensions*' Tower quantity increases from 37 nos. to 41 nos., please clarify whether the contractor gets paid for 41 nos. of Towers supplied /erected at the unit rate as per price schedule. Please confirm.	tions or other conditions as specified in the RfB, the provisions provided for under GCC 39.2 and GCC 39.3 shall apply. Refer to Contract Form X, Forms and Procedure, Change Order Procedure and Forms
344.	21.02 3.15.1	Price Schedule No.4 Section VII - Employers Requirements	Y	Item No. 21.02 under SCHEDULE 4: Installation Services of ZTIP_330kV Kasama-Nakonde_Price Schedules_Rev01_15072026 and Clause 3.15.1 – Office Accommodation of Section VII – Employer's Requirements Under **Item No. 21.02** under SCHEDULE 4: Installation Services of the **330 kV Kasama–Nakonde Price Schedule**, it is stated ***"Office equipment as per Table 3 in Section VII of the Bidding Documents – Employer's Requirements, Section VII Part II. Note: Including 132 kV Kasama–Nakonde and 400 kV Nakonde–Tanzania Border."*** However, we are unable to locate **Table 3** relating to the office equipment in the Employer's Requirements. Further, **Clause 3.15.1 – Office Accommodation** of **Section VII – Employer's Requirements** specifies the following office equipment and furniture to be provided for each office block: • Internet access (24/7) through Starlink or equivalent • LaserJet colour printer (A3/A4, medium duty) • Medium-duty photocopier	An Addendum 4 S. No. 4 issued to amend details of schedule 4 item 21.02 of 330kV Price schedule and item 18.02 of 132kV and 400kV Price Schedules as follows: "Office equipment as per **clause 3.15.1** in section VII of the Bidding Documents - Employer's Requirements section VII part II…"

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				• Office consumables (A3/A4 paper, toner, etc.) • Scanner • Digital camera • Projector • Office tables • Office chairs • Shelves and bookcases • Other furniture as required • Split-type air conditioning unit • Fire extinguishers Kindly clarify whether the office equipment to be priced under **Item No. 21.02** shall be based on the requirements specified in **Clause 3.15.1**, or whether a separate **Table 3** exists and will be issued.	
345.	1.40	Price Schedule No.3	N	Item No. 1.40 under SCHEDULE 3: Design Services of ZTIP 330kV Kasama-Nakonde Price Schedules_Rev01_15072026 Item No. 1.40 under **SCHEDULE 3: Design Services** of the **330 kV Kasama–Nakonde Price Schedule** states: *"Clearing the right-of-way & construction of all required access and maintenance roads including installation of wayleave demarcation reinforced cement concrete markers."* However, **SCHEDULE 4: Installation Services**, Item No. **0.03A**, also includes:	Item No. 1.40 under Schedule 3 covers the design/engineering of access roads (design, setting-out, and supervision), distinct from the physical construction works to be priced under Item No. 0.03A of Schedule 4 — no duplication arises, as each item addresses a separate scope

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
				"Construction of access roads complete with the finger access roads from public roads as per Employer's Requirements." Similar overlap is also observed in the following Price Schedules: ZTIP 400kV Nakonde–Tanzania Border Price Schedules_Rev01_15072026 and ZTIP 132kV Nakonde–Isoka LI-LO Price Schedules Rev01_15072026. Since the construction of access roads appears to be covered under both schedules, kindly clarify under which item the cost for **construction of access roads, including finger access roads from public roads**, should be considered to avoid duplication in pricing.	
346.	0.06	Price Schedule No.4	N	Item No. 0.06 under SCHEDULE 4: Installation Services of the 330 kV Kasama–Nakonde Price Schedule Item No. **0.06** under **SCHEDULE 4: Installation Services** of the **330 kV Kasama–Nakonde Price Schedule** states: *"Water and Builder's supply. Note: Including 132 kV Kasama–Nakonde and 400 kV Nakonde–Tanzania Border."* A similar item is also included in ZTIP 400 kV Nakonde–Tanzania Border Price Schedules_Rev01_15072026 and ZTIP 132 kV Nakonde–Isoka LI-LO Price Schedules_Rev01_15072026. Kindly clarify the meaning and scope of **"Builder's supply"** under the above item.	Refer to RfC S. No 290.

S. No.	Specification Clause	Document Reference	Addendum Required [Y/N]	REQUEST FOR CLARIFICATION ON	EMPLOYER'S RESPONSE
347.	S. No. 7 RFC 225 0.7.28, 0.7.29	Addendum 2 Clarification 1 Technical Schedule	N	AMENDMENT NUMBER TWO (02) To All Bidders issued 30th July, 2026; Point no. 07 Response to Point no. 225 of Clarifications to Bidding Documents no. 1 ZTIP Technical Schedule, Item no. 0.7.28 & 0.7.29 Kindly note that the response provided against Point No. 225 of Clarification no. 1, is not clear and requires further clarification for better understanding. As per Addendum no. 2, Sr. no. 7 it is mentioned that BSEN 1992 standard shall be referred for design of concrete structures. Moreover as per Technical schedule (GTP), foundation load factors shall be considered as mentioned below: 1) Soil property at suspension tower – 2.0 2) Soil property at tension tower - 2.2 In EN 1992-1-1 clause 2.4.2.5, it is mentioned that Design values of strength properties of the ground should be calculated in accordance with EN 1997. As per clause A.2 of EN 1997 partial safety factors shall be applied for various soil parameters such as angle of shearing resistance, unconfined shear strength etc. However, partial factor for soil density is 1.0	The information provided is considered sufficient for bidding purposes.

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				Based on the above, we presume that if density of soil = x, angle of uplift frustum (or angle of repose) = y, & ultimate bearing capacity (UBC) = z, then the following parameters are to be considered in design of foundations: Parameter — For Suspension tower — For tension tower Soil Density — x /1 — x /1 Angle of repose — y /2.00 — y /2.20 UBC — z / 2.00 — z /2.20 Kindly confirm whether our presumption is correct or not.	
348.	GCC 13.2	Section VIII – General Conditions of Contract	N	Section VIII – General Conditions of Contract; Clause No. 13.2 As per Clause No. 13.2.1 of Section VIII – General Conditions of Contract; the Advance Payment Security shall be submitted within 28 days from the date of receipt of Notification of Award. However, as per Indian as per India Banking regulations, the banks can not process and issue Advance Payment Security, until the signed contract copy furnished to them. We therefore, request you to provide more that 28 days to furnish Advance Payment Security.	Refer to Clarification No. 1, RfC S.No. 176.

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