



ZIMBABWE ELECTRICITY TRANSMISSION & DISTRIBUTION COMPANY

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OUR REF:..... FN/ec

YOUR REF

WHEN CALLING WITH REFERENCE
TO THIS LETTER PLEASE ASK FOR

..... F. Nyamakambo.....

11 September 2023

To All Bidders

Dear Sir/Madam

ADDENDUM NO. 2 TO TENDER NO. ZETDC/INTER/03/2023 FOR THE SUPPLY AND DELIVERY OF CABLES AND CONDUCTORS

The above subject matter refers.

Kindly find attached **Addendum No. 2** to Tender No. ZETDC/INTER/03/2023 for the Supply and Delivery of Cables and Conductors, being realignment, rephrasing and deletion of some clauses under **Part 1: Bidding Procedures, 1.1 Preparation of Bids** where clauses 18 to 26 inclusive on page 4 of 55 to page 5 of 55 in the Standard Bidding Document (SBD) have been deleted. Hence, **clauses 1 to 26 on page 4 of 55 to page 5 of 55** in the SBD have been superseded by **clauses 1 to 21 in Addendum No. 2 to the SBD.**

Also included as part of **Addendum No. 2** to the SBD are other mandatory technical specification requirements and **Technical Specification for Lot A, item 1, Cable 185mm² CU 3C 11kV XLPE** which was missing in the SBD.

The other terms and conditions of the tender remain the same.

Yours faithfully

A handwritten signature in black ink, appearing to read 'F. Nyamakambo', is written over the typed name.

F. NYAMAKAMBO
SUPPLY CHAIN MANAGER

ZIMBABWE ELECTRICITY TRANSMISSION & DISTRIBUTION COMPANY



ADDENDUM NO. 2

TO STANDARD BIDDING DOCUMENT (SBD) FOR
TENDER NO. ZETDC/INTER/03/2023

FOR THE SUPPLY AND DELIVERY OF CABLES AND
CONDUCTORS

ZETDC H/O PROCUREMENT

11 SEP 2023

2nd Floor, Southwing, Electricity Centre
25 S. Machel Avenue, Harare
Tel: 0242 750262
procurement@zetdc.co.zw

Procurement Reference Number: ZETDC/INTER/03/2023

1.1 Preparation of Bids

You are requested to bid for the items described in the Statement of Requirements below, by completing and returning the following documentation:

1. The Bid Submission Sheet in this Part in the format specified in Part 1;
2. The Statement of Requirements in Part 2 in the format specified in Part 2;
3. Bidder's Detail Form must be completed and submitted together with the bid;
4. All Bidders must complete all schedules without fail for them to be eligible bidders to attach a copy of every document necessary to demonstrate eligibility in terms of section 28 (1) of the Regulations;
5. Proof of Registration with the Procurement Regulatory Authority of Zimbabwe (PRAZ) in the relevant category year 2023; Electrical Products: Cables and Materials, Power Back-Up Equipment, Transformers, Standby Generators, Consumables & Accessories **(GE001)**;
6. A bid security of **USD 500.00** payable in Zimbabwean Dollars at the RBZ prevailing Interbank rate of the day in the format specified in this part;
7. Proof of payment of **USD 350.00** payable in Zimbabwean Dollars at the RBZ prevailing Interbank rate of the day to the Procurement Regulatory Authority of Zimbabwe Special Procurement Oversight Committee (SPOC) fee;
8. A copy of Certificate of Incorporation, CR 14; CR6 forms for local companies or equivalent company registration documents in the country of residence for foreign companies;
9. Proof of registration with ZIMRA for local companies or equivalent proof of registration with revenue authorities in the country of residence for foreign companies;
10. Bid Validity of ninety (90) days must be clearly stated;
11. Payment terms are within 30 days after delivery and must be clearly stated for both local and foreign bidders. Payment will be in Zimbabwean dollars (ZW\$) at prevailing Reserve Bank of Zimbabwe Interbank Rate on the date of payment for local bidders. Foreign bidders will be paid in United States Dollars (USD) within 30 days after delivery;
12. Delivery period is within eight (8) weeks after receipt of order and must be clearly stated.
13. Applicable incoterms must be C.I.F. Harare, ZETDC Central Stores and must be clearly stated;
14. Valid Letter of Authorization from the Manufacturer, duly signed on official letterhead, specifically for Tender No. ZETDC/INTER/03/2023 for the Supply & Delivery of Cables and Conductors to be provided with the bid by Agents/Non-Manufacturers.
15. Valid Copy of ISO 9001/2 or proof of SABS/SAZ mark/certification for the manufacturer to be provided with the bid.

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11 SEP 2023

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16. Minimum of three (3) bidder's trade reference letters, in this case bidders who are non-manufacturers and this must be on a duly signed official letter head from customers **(excluding ZETDC)** with active contact details showing bidders' direct experience in the supply and delivery of any type of electrical products;
17. At least two (2) manufacturer's trade reference letters (i.e. for Original Equipment Manufacturer/OEM) on equipment similar to the tendered items (i.e. cables and conductors respectively) on official letterhead duly signed by the customers **(excluding ZETDC)** with active contact details shall be submitted with the bid;
18. Manufacturer's supply history of at least five (5) years on equipment similar to the tendered items (i.e. cables and conductors respectively) to be provided with the bid, clearly stating year, client, name of project/item description, quantity and completion/delivery status;
19. Technical brochures with detailed literature in English covering the tendered items to be included in the bid.
20. Results of Type tests or type test reports carried out by an independent Technical Institute on previously manufactured Cables and Conductors similar to the tendered items must be submitted with the bid and in English. That is, Results of Type tests carried out by an independent Technical Institute on previously manufactured items to be included in the bid. The tests should have been carried out by a recognised institute (e.g. KEEMA). The institute should be recognised by IEC. Documentary proof that the Test Institute is recognised by IEC shall be provided with the bid.
21. The warranty period for the tendered items shall be for at least one (1) year from date of delivery on site and must be clearly stated on manufacturer's letterhead and duly signed by the manufacturer. N.B. Warranty period only stated as full warranty by the manufacturer without indicating number of years, in this case at least one (1) year as requested is not acceptable. Hence, actual number of year(s) must be clearly stated.

Note: Clauses 1 to 26 on page 4 of 55 to page 5 of 55 in the SBD have been superceded by the above clauses 1 to 21 under this Addendum No. 2 to the SBD.

NB: Failure to comply with the above requirements leads to automatic disqualification.



OTHER MANDATORY REQUIREMENTS TO TECHNICAL SPECIFICATIONS

The following mandatory technical specifications shall apply to all technical specifications in the Standard Bidding Document and shall take precedence in the event that there is conflict with other clauses of the technical specifications in the Standard Bidding Document (SBD):

1. TECHNICAL COMPLIANCE STATEMENTS

Technical Compliance Statements on a clause by clause basis i.e. for the tendered equipment in line with the technical specifications in the SBD and Addendum No. 2 must be submitted together with the bid.

Tenderers shall include a complete statement of compliance with Technical Specification on a clause by clause basis under clause 2.3 on page 16 to 21 of 55, clause 2.4 on page 22 to 31 of 55, clause 2.5 on page 32 to 36 of 55, clause 2.6 on page 36 to 42 of 55, clause 2.7 on page 42 to 48 of 55 in the SBD respectively. This includes additional Technical Specification for XLPE Power Cables Rated up to 132kV issued under Addendum No. 2 to the SBD. That is, for every clause in the above stated Technical Specifications the Tenderers shall state compliance or non-compliance and shall elaborate where appropriate.

Tenderers shall use the words "comply", "do not comply" with the above stated Technical Specifications or in the clauses of an informative nature, "noted".

2. FACTORY ACCEPTANCE TESTS

Factory Acceptance Tests shall be carried according to the IEC 502 standard. Tests to be carried out are as specified in the respective technical specifications.

The Factory Acceptance Testing (FAT) for the equipment tendered shall be witnessed by three (3) ZETDC personnel. The Bidder will pay the full costs for the travel and per-diem for the ZETDC personnel, hence FAT costs are borne by the Bidder.

3. SAMPLES

A sample to be submitted together with the bid is only required for Item 2, Lot A, Cable Air DAC 25mm (2/2.21) FIG 8 AL.

Thus, a sample piece of the tendered 25mm² aluminum service cable length two meter (2m) manufactured according to the specification for Cable Air DAC 25mm(2/2.21) FIG 8 AL shall be submitted together with the bid. Bidder's identity shall be indelibly marked on the samples.



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DISTRIBUTION DEPARTMENT

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ZETDC SPECIFICATION NO. DS20052022XLPE

SPECIFICATION FOR

XLPE POWER CABLES RATED UP TO 132KV

SPECIFICATION FOR: - XLPE POWER CABLES RATED UP TO 132KV

1. SCOPE

This Specification calls for supply and delivery of XLPE Power Cables rated up to 132kV.

The supplier shall state name, place and country of manufacture. The supplier shall state whether or not the cables are produced under license, in which case license holder's name shall be stated.

Bidders/Tenderers shall include a complete list of suitable jointing and termination kits available on the market for the cables being tendered. They should also list the recommended types of terminating and jointing kits.

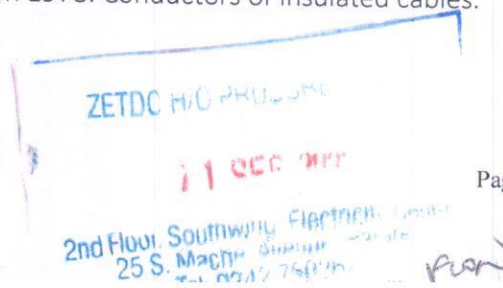
The manufacture shall have a proven track record of manufacture and delivery of such goods for at least 5 years, and must indicate production for the past 2 years.

The bidder/tenderer has to complete the Technical Guarantee Schedules at the end of the specification.

2. Standards, Units and Language

All cables supplied under this specification shall conform to the following standards: -

- (i) **IEC 502** for cables rated up to 30kV for XLPE cables
- (ii) **IEC 840** for cables rated above 30kV
- (iii) **BS 6480: 1988** Impregnated paper insulated lead or lead alloy sheathed electric cable with rated voltage up to and including 33kV.
- (iv) **IEC 228** Second Edition 1978: Conductors of insulated cables.



- (v) Any other standard provided the Bidder can provide documentary evidence that the standard is equal to or better than the above standards.

Cables not complying with the above standards will be rejected. All tenders, correspondence, and all description upon drawings, illustrations or instructions shall be in the **English language**.

SI units of measurements shall be used throughout. The Cables shall be manufactured to high quality standards. The companies manufacturing the cables shall have ISO Certification. Documentary proof of **ISO certification** shall be provided with the bid.

3. Particulars of Electrical System

The cables shall be capable of operation in the following system: -

- (a) 3 phase, underground, resistance earthed system.
- (b) Operated at 50Hz variable between plus or minus 2.5%
- (c) A highest system voltage not exceeding the normal by more than 10%.
- (d) Earthed so that the earth fault factor will be less than 1.5 at any location.
- (e) Maximum duration of earth fault not exceeding 20s.

4. Particulars of Environment

The cables will either be subjected to Atmospheric or Underground Environment or both.



4.1 Particulars of Atmospheric Environment

The cables shall be capable of operation under the following atmospheric conditions.

- (a) At an average altitude of 1 500m above sea level.
- (b) Ambient air temperatures not exceeding +45 degrees centigrade or below - 10 degrees centigrade.
- (c) Humidity 13mg/cubic metre absolute and 65% relative before storms with vapour pressure 17mm hg.
- (d) Equipment will operate within the tropics and is subject to sudden ambient air temperature changes of the order of **10 degrees centigrade per hour** occurring at the onset of rain, but the barometric pressure at any given place does not vary by more than approximately 10mm mercury.
- (e) Frequent and severe lightning storms occur during summer months, with **isoraunic** levels varying between 50 and 100 thunderstorm days per annum.
- (f) Particular attention should be paid in the design of all equipment to ensure that there is no damage to working parts or insulation through the ingress of dust, insects, vermin which are prevalent for long periods in the year.

4.2 Particulars of Underground Environment

In addition to being exposed to the conditions stated in 4.1 the cables shall be capable of operation in the following underground conditions: -

- (a) At a depth of burial from the ground surface to centre of the cable, of 850mm for 11kV cables, and 1050mm for 33kV cables and 1300mm for cables greater than 33kV.

ZETDC H/O PROCUREMENT

11 SEP 2023

Page 4 of 12

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- (b) Mean ground temperature at this depth being 25 degrees centigrade with a maximum value of 30 degrees.
- (c) In soil with a maximum resistivity of 1.2 KΩ m
- (d) With a foundation or bed of washed pit sand 150mm deep laid in the trench first, followed by a second 150mm pit sand above the cable. It is then backfilled by 450mm of earth before the yellow cable marker ribbon is laid and the trench completely closed.

5. Electrical Equipment Materials

All materials incorporated in the equipment supplied shall be new and of first class commercial quality, free from defects and imperfections.

6. Cable Details

The specification covers single-core and three core copper and Aluminium cables, which are of Crosslinked Polyethylene type, of cross-sectional area 16mm. Sq up to and including 1000mm.sq for alternating voltages of up to and including 132kV.



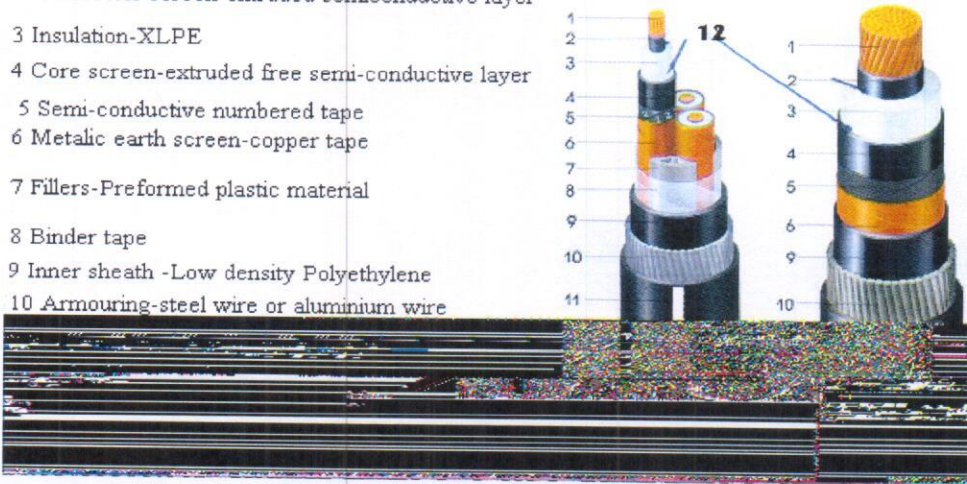
7. Cable Construction:

7.1 The construction of the XLPE cable shall be as follows:-

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CONSTRUCTION OF XLPE CABLES

- 1 Conductor-aluminium or copper
- 2 Conductor screen-extruded semiconductive layer
- 3 Insulation-XLPE
- 4 Core screen-extruded free semi-conductive layer
- 5 Semi-conductive numbered tape
- 6 Metallic earth screen-copper tape
- 7 Fillers-Preformed plastic material
- 8 Binder tape
- 9 Inner sheath -Low density Polyethylene
- 10 Armouring-steel wire or aluminium wire



7.1.1 Conductor

The Conductors shall be of compact circular stranded copper conductor or Aluminium as specified in the schedule of requirements, in accordance with IEC228, clause 2. A water absorbing powder shall be provided between the conductors and semi conductive screen. (7.2 and 7.1)

7.1.2 Conductor Screen

This shall be of non-metallic material and shall consist of a layer of extruded thermoset semi-conductive compound

7.1.3 Insulation

The insulation shall consists of an extruded layer of cross-linked polyethylene (XLPE) complying with IEC 502. The XLPE shall not be steam vulcanised. It shall be dry-vulcanised cables, steam vulcanised XLPE insulation are not acceptable. A water absorbing tap or powder shall be placed between the XLPE Insulation and non-metallic insulation screen.

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7.1.4 Non-Metallic Insulation Screen

This shall be non-metallic material and shall consist of a layer of extruded non-strippable vulcanised semi-conducting compound.

7.1.5 Metallic Insulation Screen

The metallic insulation screen shall consist of annealed plain copper tape, applied helically with suitable overlay. The suitable binder tape shall be applied over the metallic insulation screen with suitable overlap for single core cables only.

7.1.6 Core Identification (for three core cables only)

The cores of the cable shall be identified by colour strip tape, (Red, Yellow, Blue) on the non-metallic insulation screen.

7.1.7 Assembly of Core (For three core cable only)

The cores shall be assembled together with fillers to form compact circular shape and wrapped with suitable binder tape with a suitable overlay.

The fillers shall be of suitable material which shall be compatible with other materials of the cable and shall be capable of operating continuously at maximum operating temperature of the cable without being adversely affected.

7.1.8 Separation Sheath

The separation sheath shall consist of an extruded 2mm layer of low density Polyethylene.

7.1.9 Wire Armour

The armour shall consist of one layer of galvanised steel round wire.

Suitable binder tape may be applied over metallic armour at manufacturer's option.

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7.1.10 Outer Sheath

The outer sheath shall consist of a layer of at least 2mm low density Polyethylene.

8. Bending Radii

The bending radius shall be less than 15 times the diameter of the cable

9. Cable Marking

A marking bearing voltage designation, maker's name, year of manufacture shall be marked on the PVC outer sheath at suitable intervals throughout the cable. The cable shall be marked at 1.0 m intervals to indicate the length of cable remaining on the cable drum as the cable is used.

10. Alternative Constructions

The Construction stated in 7 above is the preferred construction. However Suppliers/Manufacturers can also offer other construction designs provided they can provide documentary evidence that these are an improvement to the preferred designs.

11. Tests

The following tests shall be carried out at manufacturers' factory. The Test methods shall be in accordance with IEC 502 (1983) for cables rated below 30kV and IEC 840 for cables rated above 30kV.

ITEM	CABLE TESTS	UP TO 30KV	GREATER THAN 30KV
1	Construction Test		IEC 840
2	Partial Discharge Test		IEC 885-2
3	Electrical Test on Non-metallic Sheath	IEC 502	IEC 229
4	Measurement of Electrical Resistance	IEC 502	IEC 228

5	Hot Set Test		IEC 811-2-1
6	Partial Discharge Test	IEC 502	IEC 885-2
7	Resistivity of Semi conducting layer		IEC 811-1-2
8	Tests on PVC Sheaths		IEC 811-1-1
8.1	Mechanical Properties		IEC 811-3-2
8.2	Loss of Mass		IEC 811-3-1
8.3	Pressure Test at High Temperature		IEC 811-3-1
8.4	Test at Low Temperature		IEC 811-1-4
8.5	Heat Shock Test		IEC 811-3-1
9	Carbon Black Content on PE Sheath		IEC 811-4-1
10	Test Under Fire Conditions		IEC 322-1
11	Water Penetration tests		IEC 840
12	Test on XLPE		
12.1	Shrinking Test		
12.2	Mechanical properties		
12.3	Hot Set Test		

For orders exceeding 15km of cable, two ZETDC engineers will witness the tests. The manufacturer/supplier will meet the full costs for the tests including the costs for ZETDC representatives witnessing the tests. The Supplier has to provide type tests Certificates for tests carried on the previously manufactured cables. Bids that do not include test certificates will be rejected. The tests should have been carried out by a recognised institute (e.g. KEEMA). The Test institute should be recognised by IEC. Documentary



proof that the Test Institute is recognised by IEC shall be provided with the bid.

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12. Further Information Required

The following information is required:-

- i) The capacitive inductive reactance per kilometre.
- ii) The positive and zero phase sequence impedance per kilometre.
- iii) The maximum a.c. and d.c. resistance per kilometre
- iv) Pressure test voltage for new and old cables.

13. Drumming Cables

Cables are to be supplied on suitably reinforced cable drums which shall be weatherproofed for extended external outdoor unprotected storage. Each drum shall be firmly, clearly and indelibly labelled to include information on actual cable length in meters, size, type, and voltage rating of the cable, as well as rolling arrow and direction of lay of the cores where appropriate.

The drum capacities shall be utilised fully, and the drum sizes selected for minimum drum transport cost. The drum weight shall not exceed 1000kg.

14. Ratings

14.1 Voltage rating

The maximum continuous voltage rating shall be 10% more than the continuous voltage rating. Cables that do not meet this requirement will be rejected.

14.2 Current Rating

Unless otherwise approved by the Authority, the current ratings depending on the method and environment in which the cable is laid according to the attached schedule of requirements shall conform to IEC 502 for cable rated below 30kV and IEC 840 for cables rated above 30kV. These shall correspond to conductor temperature of 90 degrees during normal operation and 250 degrees during faults. The short circuit ratings shall be according to IEC 949.

proof that the Test Institute is recognised by IEC shall be provided with the bid.

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Cables are to be supplied on suitably reinforced cable drums which shall be weatherproofed for extended external outdoor unprotected storage. Each drum shall be firmly, clearly and indelibly labelled to include information on actual cable length in meters, size, type, and voltage rating of the cable, as well as rolling arrow and direction of lay of the cores where appropriate.

The drum capacities shall be utilised fully, and the drum sizes selected for minimum drum transport cost. The drum weight shall not exceed 1000kg.

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15 TECHNICAL GUARANTEE SCHEDULE FOR 11KV 3 CORE XLPE CABLE

TECHNICAL GUARANTEES (TO BE FILLED IN BY BIDDER)			
BIDDERS SHALL STATE WHICH STANDARD IS BEING COMPLIED TO			
	DESCRIPTION	REQUIRED	ACTUAL
1	Voltage kV	11	
2	Insulating Material	XLPE	
3	Conductor Material	Copper	
4	Conductor Size sq.mm	185	
5	No. Of Cores	3	
6	Thickness of Insulation mm	3.4	
7	Armouring Type	Round Steel Wires	
8	Sheath thickness mm	3.2	
9	Nominal screen area sq.mm	25	
10	Overall diameter mm	74	
11	Bending radius mm	Less than 15 times the diameter of the cable.	
12	Core Identification	Red, Yellow, Blue	
13	Permissible Conductor temperature during normal operation, degrees	90	
14	Permissible Conductor temperature during faults, degrees	250	
15	AC resistance at 20 degrees ohm/km	0.131	
16	DC resistance at 20 degrees ohm/km	0.099	
17	Short Time Current 3 second kA	25	

18	Nominal Current in air A	469	
19	Nominal underground	Current 443	

Tenderer's Signature: _____ Date: _____

16 IMPORTANT INFORMATION

1. Bidders/Tenderers shall include a complete list of suitable jointing and termination kits available on the market for the cables being tendered. They should also list the recommended types of terminating and jointing kits.
2. The manufacture shall have a proven track record of manufacture and delivery of such goods for at least 5 years, and must indicate production for the past 2 years.
3. Marking bearing voltage designation, maker's name, year of manufacture shall be marked on the PVC outer sheath at suitable intervals throughout the cable. The cable shall be marked at 1.0 m intervals to indicate the length of cable remaining on the cable drum as the cable is used.
4. Each drum shall be firmly, clearly and indelibly labelled to include information on actual cable length in meters, size, type, and voltage rating of the cable, as well as rolling arrow and direction of lay of the cores where appropriate.
5. The bidder/tenderer has to complete the Technical Guarantee Schedules at the end of the specification. The bidder should also fill-in the Technical Guarantee Schedules the actual standard being complied to.
6. Compliance statement to the specification on a clause by clause basis to be provided.

Failure to meet any of the technical requirements shall result in rejection of the bid.

