

PART C2.2
ACTIVITY, QUANTITIES & BILL SCHEDULES

CONTENTS

PART	DESCRIPTION	APPLICABLE
1	PRELIMINARY AND GENERAL	YES
2	TOWER FOUNDATIONS	YES
3	TOWER STRUCTURES, CONDUCTORS AND FITTINGS	YES
4	MINOR WORKS	YES
5	UNIT RATES	YES
6	COMMUNITY LIASON OFFICER	YES
7	ENGINEERING CHANGES:	YES

PART C2: PRICING DATA**PART C2.2: ACTIVITY SCHEDULE (AS), QUANTITIES (QTY) & BILL (R) SCHEDULES****SOSHANGUVE 132kV OVERHEAD POWERLINE****TENDER : EED 22.2022-23****ITEM 1: PRELIMINARY AND GENERAL**

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY (1)	UNIT PRICE (EXCL. VAT) (2)	TOTAL PRICE (EXCL. VAT) (1)*(2)
1	PRELIMINARY & GENERAL:				
1.1	Establish contractor's site yard, offices, staff accommodation & camp, provide sanitation facilities, workshop, stores, including all water and electricity supplies, drainage and waste disposal systems, telecoms/telephone facilities etc. Make provision for any other item necessary to execute the project and not listed under any specific item on the Bill of Material. Remove on completion and rehabilitate the site after completion of the project.				
1.1.1	Civil Works: Site Costs and Office Overheads (Inclusive of Fixed and Variable Costs)	sum	1		
1.1.2	Electrical/Mechanical Works: Site Costs and Office Overheads (Inclusive of Fixed and Variable Costs)	sum	1		
1.1.3	Commissioning: Only for Testing	sum	1		
1.2	Storage of equipment: Safe and protected storage on site of all items (including free-issue items, if any) must be provided.	sum	1		
1.3	Labeling & Signs:				
	Equipment labeling: All tower structures must be labelled. See label drawings in Part C4.				
1.3.1	Type 1.4: Phase R W B identification	each	360		
1.3.2	Type 2.1: Line identification	each	120		
1.3.3	Type 2.2: Tower identification	each	120		
1.4	Safety signs: See drawings in Part C4.				
1.4.1	Type WW23: Tower Structure	each	120		
1.5	Implementation Plan: A plan with a work-breakdown structure with at least three levels of detail (1st - Overview of main elements, 2nd - each main element broken up into sub-elements, 3rd - detail description of each sub-element / works-order).	sum	1		
1.6	Insurance: Contractor must take out Insurance for the contract works as per specification. Proof must be submitted within 14 working days after acceptance of Contract and thereafter the contractor shall provide monthly proof of payment of the insurance premiums.				
1.6.1	Insurance taken out by Contractor: All risk insurance cover, including SASRIA and public liability, with regard to all material under this contract including free issue equipments until final construction hand-over.	sum	1		
1.7	Safety: Provision must be made to comply with the Occupational Health and Safety Act (Act 85 of 93) and the requirements of the Construction Regulations 2014 or the latest updated acts/regulations or the replacement thereof.				
1.7.1	Safety Training & Supervision	sum	1		
1.7.2	Safety Officer (SACPCMP Registration Mandatory)	sum	1		
1.7.3	Safety Implementation Plan:	sum	1		
1.7.4	OHS File	sum	1		
1.7.5	Safety nets, earths & signs: Provision must be made to fence off working areas, tower foundation excavations and put up warning signs. Contractor supply all nets, earths and signs. Nets must be minimum 1.8m high PVC orange coloured and be properly supported with wooden or steel poles. The tower foundation excavations must be adequately fenced off to protect the general public. The Contractor must maintain the safety nets & barricading and warning signs at all times until instructions are received from the Engineer	sum	1		
1.8	Permits & notices: Obtain switching requests/permits, co-operation with other government & private entities, parastatal etc. as and when required.	sum	1		
1.9	Environmental Management Plan (EMP): As per specification.	sum	1		
1.10	Commissioning & testing: Supply all test equipment and labour for testing, commissioning and adjustments of the final installation as well as being in attendance for any inspections and tests that the Engineer may call for.				

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (EXCL. VAT) (2)	TOTAL PRICE (EXCL. VAT) (1)*(2)
			(1)		
1.10.1	Commisioning & testing: 132kV Line Incommer bay complete including all equipment at JJ Substation.	PI	2	R 200,000.00	R 400,000.00
1.10.2	Commisioning & testing: Substation equipment and remote-end equipment protection and control complete including all equipment. All line inter-trips, outo-reclosing, etc. at JJ Substation	PI	1	R 500,000.00	R 500,000.00
1.10.3	Commisioning & testing: Substation Micro-Scada, Remote (Capital Park) Scada control and monitoring system complete including all equipment (communication) (JJ Substation)	PI	1	R 500,000.00	R 500,000.00
1.11	Guarantee: Defect Liability Period of 12 months for defects in equipment, material and workmanship, but exluding abuse, wear and tear and maintenance of existing equipment.	sum	1		
1.12	Operating & Maintanance Manuals (O&M M's): Provide for O&M Manuals including "As-Built" drawings, test certificates, etc. All the technical data of the equipment installed must be supplied in hard copies and electronic format	set	3		
1.13	Hand-over: Hand-over inspections on completion of the construction and guarrantee phases.	sum	1		
1.14	Security:				
1.14.1	Security Services: Provide for 24hour security services during the construction work with armed response. The security company must be registered with PSIRA. The security guard must be grade B. At least 6 guards at night and 4 during the day. Provide for guard house.	sum	1		
1.15	Inspections and witness testing (as specified for routine and type tests) of all equipment outside Gauteng area: All cost for 2 technical staff members from CoT or appointed consultants by CoT (contractor travel, accommodation, hourly rates and subsistance) to carry out inspections.	PI	1	R 100,000.00	R 100,000.00
1.16	Additional items: Any items that the Tenderer may wish to detail and price:				
1.16.1					
1.16.2					
1.16.3					
	Total of Item 1 (Total carried over to Price Summary Schedule)				

PART C2: PRICING DATA

PART C2.2: ACTIVITY SCHEDULE (AS), QUANTITIES (QTY) & BILL (R) SCHEDULES

SOSHANGUVE 132KV OVERHEAD POWERLINE

TENDER : EED 22.2022-23

ITEM 2: TOWER FOUNDATIONS

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (EXCL. VAT) (2)	TOTAL PRICE (EXCL. VAT) (1)*(2)
			(1)		
2	TOWER FOUNDATIONS				
2.1	SECTION 1: SOSHANGUVE T - MOLEFI MAKINTA SWITCHING STATION 132KV, 300MVA DOUBLE CIRCUIT, TWIN BEAR CONDUCTOR, STEEL MONOPOLE FOUNDATIONS				
	MONOPOLE TOWER FOUNDATIONS: Double circuit on separate mono pole tower structures with twin BEAR conductor per phase. The type of foundations constructed will be informed by the geo-technical study which the contractor will conduct and Project Manager approves.				
2.1.1	<u>0° - 3° Suspention tower foundation</u>				
2.1.1.1	Foundation in soil type 1	Tower	50		
2.1.1.2	Foundation in soil type 2	Tower	30		
2.1.1.3	Foundation in soil type 3	Tower	30		
2.1.1.4	Foundation in soil type 4	Tower	5		
2.1.1.5	Foundation in soft rock	Tower	5		
2.1.1.6	Foundation in hard rock	Tower	5		
2.1.2	<u>0° - 30° Angle strain tower foundation</u>				
2.1.2.1	Foundation in soil type 1	Tower	22		
2.1.2.2	Foundation in soil type 2	Tower	22		
2.1.2.3	Foundation in soil type 3	Tower	10		
2.1.2.4	Foundation in soil type 4	Tower	10		
2.1.2.5	Foundation in soft rock	Tower	5		
2.1.2.6	Foundation in hard rock	Tower	5		
2.1.3	<u>30° - 60° Angle strain tower foundation</u>				
2.1.3.1	Foundation in soil type 1	Tower	12		
2.1.3.2	Foundation in soil type 2	Tower	12		
2.1.3.3	Foundation in soil type 3	Tower	12		
2.1.3.4	Foundation in soil type 4	Tower	4		
2.1.3.5	Foundation in soft rock	Tower	4		
2.1.3.6	Foundation in hard rock	Tower	4		
2.1.5	<u>0° - 90° Terminal strain tower foundation</u>				
2.1.4.1	Foundation in soil type 1	Tower	4		
2.1.4.2	Foundation in soil type 2	Tower	4		
2.1.4.3	Foundation in soil type 3	Tower	4		
2.1.4.4	Foundation in soil type 4	Tower	4		
2.1.4.5	Foundation in soft rock	Tower	4		
2.1.4.6	Foundation in hard rock	Tower	4		
2.2	SECTION 2: MOLEFI MAKINTA SWITCHING STATION - JJ SUBSTATION 132KV, 150MVA DOUBLE CIRCUIT, SINGLE BEAR CONDUCTOR, STEEL MONOPOLE OVERHEAD POWER LINE				

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (EXCL. VAT)	TOTAL PRICE (EXCL. VAT)
			(1)	(2)	(1)*(2)
	MONOPOLE TOWER FOUNDATIONS: Double circuit on separate monopole structures with single BEAR conductor. The type of foundations constructed will be informed by the geo-technical study which the contractor will conduct and Project Manager approves.				
2.2.1	<u>0° - 3° Suspension tower foundation</u>				
2.2.1.1	Foundation in soil type 1	Tower	18		
2.2.1.2	Foundation in soil type 2	Tower	18		
2.2.1.3	Foundation in soil type 3	Tower	18		
2.2.1.4	Foundation in soil type 4	Tower	5		
2.2.1.5	Foundation in soft rock	Tower	5		
2.2.1.6	Foundation in hard rock	Tower	5		
2.2.2.1	<u>0° - 30° Angle strain tower foundation</u>				
2.2.2.2	Foundation in soil type 1	Tower	8		
2.2.2.3	Foundation in soil type 2	Tower	8		
2.2.2.4	Foundation in soil type 3	Tower	8		
2.2.2.5	Foundation in soil type 4	Tower	8		
2.2.2.6	Foundation in soft rock	Tower	8		
2.2.2.7	Foundation in hard rock	Tower	8		
2.1.3	<u>30° - 60° Angle strain tower foundation</u>				
2.1.3.1	Foundation in soil type 1	Tower	2		
2.1.3.2	Foundation in soil type 2	Tower	2		
2.1.3.3	Foundation in soil type 3	Tower	2		
2.1.3.4	Foundation in soil type 4	Tower	2		
2.1.3.5	Foundation in soft rock	Tower	2		
2.1.3.6	Foundation in hard rock	Tower	2		
2.2.4	<u>0° - 90° Terminal strain tower foundation</u>				
2.2.4.1	Foundation in soil type 1	Tower	4		
2.2.4.2	Foundation in soil type 2	Tower	4		
2.2.4.3	Foundation in soil type 3	Tower	4		
2.2.4.4	Foundation in soil type 4	Tower	4		
2.2.4.5	Foundation in soft rock	Tower	4		
2.2.4.6	Foundation in hard rock	Tower	4		
	Total of Item 2 (Total carried over to Price Summary Schedule)				R -

PART C2: PRICING DATA

PART C2.2: ACTIVITY SCHEDULE (AS), QUANTITIES (QTY) & BILL (R) SCHEDULES

SOSHANGUVE 132kV OVERHEAD POWERLINE

TENDER : EED 22.2022/23

ITEM 3: STEEL LATTICE GANTRIES, STEEL TOWER STRUCTURES, CONDUCTORS AND POWER LINE HARDWARE

ITEM NO	DESCRIPTION	UNIT	PRICE PER UNIT			ESTIMATED QUANTITY	TOTAL PRICE (EXCL. VAT)
			MANUFACTURE, SUPPLY AND DELIVERY OF STEEL MONOPOLE STRUCTURES, CONDUCTORS AND LINE HARDWARE	ASSEMBLY AND INSTALLATION	TOTAL UNIT PRICE (EXCL. VAT) + (2)		
			(1)	(2)	(3)	(4)	(3)*(4)
3	STEEL LATTICE GANTRIES, STEEL TOWER STRUCTURES, CONDUCTORS AND POWER LINEHARD WARE						
3.1	STEEL LATTICE PORTAL TYPE GANTRIES FOR 132 KV OVERHEAD POWERLINE						
3.1	Portal gantries, plinths and foundations for powerline.						
3.1.1	Vertical columns. Similar to the existing structures on site.	Each				4	
3.1.2	Horizontal beams. Similar to the existing structures on site.	Each				2	
3.1.3	Gantry peaks: Peaks to fit on top of beams for earth-wires.	Each				4	
3.2	SECTION 1: SOSHANGUVE T - MOLEFI MAKINTA SWITCHING STATION 132KV : STEEL MONOPOLE STRUCTURES FOR 300MVA DOUBLE CIRCUIT, TWIN BEAR CONDUCTOR POWER LINE						
	MONOPOLE TOWER SUPPLY, ASSEMBLY & ERECTION: The length and size of the monopole structures will be determined by the contractor's studies and approved by the Project Manager.						
3.2.1	0° - 3° Suspention Tower Structure (Standard 32m steel monopole)	Each				50	
3.2.2	0° - 30° Angle Strain Tower Structure (Standard 32m steel monopole)	Each				22	
3.2.3	30° - 60° Angle StrainTower Structure (Standard 32m steel monopole)	Each				12	
3.2.4	0° - 90° Terminal Strain Tower Structure (Standard 32m steel monopole)	Each				4	
3.3	SECTION 2: MOLEFI MAKINTA SWITCHING STATION - JJ SUBSTATION: STEEL MONO POLE STRUCTURES FOR 132KV, 150MVA DOUBLE CIRCUIT, SINGLE BEAR CONDUCTOR OVERHEAD POWER LINE						
	MONOPOLE TOWER SUPPLY, ASSEMBLY & ERECTION: Double circuit on separate monopole structures with single BEAR conductor. The type of foundations constructed will be determined by the geo-technical study which the contractor will conduct and Project Manager will approve.						
3.3.1	0° - 3° Suspention Tower Structure: (Standard 28m steel monopole)	Each				18	
3.3.2	0° - 30° Angle Strain Tower Structure: (Standard 28m steel monopole)	Each				8	
3.3.3	30° - 60° Angle StrainTower Structure (Standard 28m steel monopole)	Each				2	
3.3.4	0° - 90° Terminal Strain Tower Structure: (Standard 28m steel monopole)	Each				4	
3.4	POWER LINE HARDWARE & INSULATORS						
3.4.1	Phase hardware						
3.4.1.1	Normal suspension set for single "BEAR" (Drawing STD-MPI-002)	set				54	
3.4.1.2	Normal tension set for single "BEAR"	set				84	
3.4.1.3	Midspan joint for single "BEAR"	Each				18	
3.4.1.4	Normal suspension set for twin "BEAR" (Drawing STD-MPI-001)	set				150	
3.4.1.5	Normal tension set for twin "BEAR"	set				228	
3.4.1.6	Spacer damper for twin "BEAR"	Each				400	
3.4.1.7	Vibration damper for "BEAR"	Each				1080	
3.4.2	Earth wire hardware - 7/3.25						
3.4.2.1	Normal suspension set for "7/3.25"	set				90	
3.4.2.2	Normal tension set for "7/3.25"	set				50	
3.4.2.3	Vibration damper for "7/3.25"	Each				125	
3.4.3	OPGW hardware						
3.4.3.1	Normal suspension set for OPGW	set				90	
3.4.3.2	Normal tension set for OPGW	set				50	
3.4.3.3	Spiral vibration damper for OPGW	Each				125	
3.4.3.4	Joint box with insulated gland	Each				15	
3.4.3.5	Fibre splicing	Fibre				15	
3.4.3.6	19" 12 Way patch panel complete with ST mid coupler tails	Each				4	
3.4.3.7	Down lead clamps	Each				10	
3.4.3.8	Trunking steel galvanised at gantry	Each				5	
3.4.3.9	Testing of drums OPGW after delivery & before stringing	Lot				20	

ITEM NO	DESCRIPTION	UNIT	PRICE PER UNIT			ESTIMATED QUANTITY	TOTAL PRICE (EXCL. VAT)
			MANUFACTURE, SUPPLY AND DELIVERY OF STEEL MONOPOLE STRUCTURES, CONDUCTORS AND LINE HARDWARE	ASSEMBLY AND INSTALLATION	TOTAL UNIT PRICE (EXCL. VAT) + (2) (1)		
			(1)	(2)	(3)	(4)	(3)*(4)
3.4.3.10	40/35mm Pre lubricated high densitypolyethelene pipe	m				400	
3.4.3.11	Testing of OPGW after jointing	Lot				1	
3.4.3.12	Prepare the OPGW for splicing	Each				20	
3.4.3.13	Install sub-duct & cable	m				100	
3.5	PHASE CONDUCTORS						
3.5.1	ACSR "BEAR" conductor	km				120	
3.6	GROUND WIRE						
3.6.1	7/3.25mm Galvanised ground wire	km				12	
3.6.2	48 Fibre composite OPGW	km				12	
3.7	LINE STRINGING & REGULATING						
3.7.1	Stringing & regulating the phase conductor: Stringing and regulating of Twin ACSR "BEAR" conductor per phase (6 conductors per line)	km				14	
3.7.2	Stringing & regulating the phase conductor: Stringing and regulating of Single ACSR "BEAR" conductor per line (3 conductors per line)	km				5	
3.7.3	Stringing & regulating the ground wire: Stringing and regulating of 7/3.25mm galvanised grouns wire (1 conductor per line)	km				12	
3.7.4	Stringing & regulating the OPGW: Stringing and regulating of OPGW (1 conductors per line)	km				12	
3.8	TEMPORARY STRUCTURES FOR CROSSING: Structures for utilities- and road crossings						
3.8.1	Across Thaba Nkwe Street	sum				1	
3.8.2	Across M44	sum				1	
3.8.3	Across Molefe Makinta	sum				1	
3.8.4	Across Makhosini Drive	sum				1	
3.8.5	Across Mokhetle/Buitekant	sum				1	
3.8.6	Across Molefe Makinta	sum				1	
3.90	SERVITUDE GATES						
3.9.1	Access gates: Supply and install 5 meter wide servitude access gates.	sum				2	
3.10	TOWER LABELS AND WARNING SIGNS						
3.10.1	Tower labels: Supply and install tower nameplate labels	each				120	
3.10.2	Tower labels: Supply and install crossing labels	each				12	
3.10.3	Tower labels: Supply and install tower warning signs	each				120	
3.10.4	Tower labels: Supply and install line circuit labels (Line 1 & Line 2)	each				120	
3.10.5	Tower labels: Supply and install phase colour identification discs (R, Y, B)	each				360	
3.11	BURIED SUPPLEMENTARY EARTH						R -
3.11.1	Buried supplementary earth: Bare copper conductor, 10mm including all joints, terminations, trenching and reinstatement.	m				1000	
	Total of Item 3 (Total carried over to Price Summary Schedule)						R -

PART C2: PRICING DATA

PART C2.2: ACTIVITY SCHEDULE (AS), QUANTITIES (QTY) & BILL (R) SCHEDULES

SOSHANGUVE 132kV OVERHEAD POWERLINE

TENDER : EED 22.2022-23

ITEM 4: MINOR WORKS (Tower Earthing and Clearing of Servitudes)

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (EXCL. VAT)	TOTAL PRICE (EXCL. VAT)
			(1)	(2)	(1)*(2)
4	MINOR WORKS				
4.1	Earth Grid: Earth grid installation must include, excavation, trenching and backfilling.				
4.1.2	Connections to tower structures above-ground must be of steel wire. Two connections per structure as a set.	each	200		
4.1.3	Soil Resistivity: Provisional Item (PI): Site survey of soil resistivity (virgin site.)	PI	1	R 100,000.00	R 100,000.00
4.1.4	Earth Grid Survey: Provisional Item (PI): Site survey of copper earth resistivity after installation.	PI	1	R 50,000.00	R 50,000.00
4.2	SERVITUDE CADASTRAL AND GEOTECH SURVEY				
4.2.1	Geotechnical survey & report: Allow for geotechnical survey and report	lot	1		
4.2.2	Land survey & report: Before construction starts a land survey needs to be conducted and a Design report needs to be issued.	sum	1		
4.2.3	Land survey & report: After construction a land survey needs to be conducted and an As-built report needs to be issued.	sum	1		
4.2.4	Pegging of the centre bend points: Pegging of the centre bend points by a professional registered land surveyor including 4 reference pegs per bend point to fix the bisector angles.	Bend points	24		
4.2.5	Pegging of centre line: Pegging of the centre of the servitude between bend points at an interval not exceeding 100m, including flagged dropper.	Pegs	90		
4.2.6	Verify and validate: Verify and validate the longitudinal and ground profiling of the entire power line route.	km	12		
4.3	SERVITUDE CLEARING				R -
4.3.1	Removal of vegetation: Cutting back of all bushes, shrubs and trees in order to obtain minimum line clearance. All cuttings should be removed from site to the nearest dump site.	sum	1		
4.3.2	Removal of obstructions: Removal of any obstructions along the route of the power line	sum	1		
	Total of Item 4 (Total carried over to Price Summary Schedule)				

PART C2: PRICING DATA

PART C2.2: ACTIVITY SCHEDULE (AS), QUANTITIES (QTY) & BILL (R) SCHEDULES

SOSHANGUVE 132kV OVERHEAD POWERLINE

TENDER : EED 22.2022-23

ITEM: 5 - 7: UNIT RATES, COMMUNITY LIAISON OFFICER (CLO) & ENGINEERING CHANGES

ITEM NO	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (EXCL. VAT)	TOTAL PRICE (EXCL. VAT)
			(1)	(2)	(1)*(2)
5	UNIT RATES				
5.1	UNIT RATES (Additional and only applicable when required by the Engineer)				
5.1.1	PLANT:				
5.1.1.1	Truck mounted crane: 5 Ton truck & 3 Ton crane with operators.	hour	200		Rate Only
5.1.1.2	Self-propelled crane: 5 Ton cane with operators.	hour	150		Rate Only
5.1.1.3	Truck: 5 Ton truck with operators.	hour	70		Rate Only
5.1.1.4	Compressor with jackhammer: With two operators.	hour	60		Rate Only
5.2	LABOUR:				
5.2.1	Engineer: Civil/Mechanical/Electrical.	hour	200		
5.3	TRAINING:				R -
	Expanded Public Works Programme (EPWP): must provide skills development and technical training for workers for an average of number of working days as indicated in brackets as per EPWP on the following programme:				
5.3.1	Steel Structure Assembling and Erection (5 days)	per worker	5		
5.3.2	Steel reinforcement (5 days)	per worker	5		
5.3.3	Setting out of works (1 day)	per worker	5		
5.3.4	Operators (Switching): One day training course for 8 people.	day	2		
5.3.5	Maintenance: One day training course for 8 people.	day	2		
5.3.6	Protection: One day training course for 8 people.	day	2		
5.3.7	Scada: One day training course for 8 people.	day	2		
5.3.8	Communication: One day training course for 8 people.	day	2		
5.4	Photo and video material: Contractor must supply material on a monthly basis the project phase whichever is applicable.	PI	1	R 50,000.00	R 50,000.00
	Total of Item 5 (Total carried over to Price Summary Schedule)				
6	COMMUNITY LIASON OFFICER				
6.1	Apointment of CLO: Provision must be made to appoint a CLO for the duration of the project	PI	1	R 800,000.00	R 800,000.00
	Total of Item 6 (Total carried over to Price Summary Schedule)				
7	ENGINEERING CHANGES: CHANGE CONTROL / VARIATION ORDER (VO's)				
7.1	Contingency sum for unforceen and engineering changes: 10% of the total sum of Item 1 to 4	sum	1		
	Total of Item 7 (Total carried over to Price Summary Schedule)				

PART C2: PRICING DATA

SOSHANGUVE 132KV OVERHEAD POWERLINE

TENDER : EED 22.2022/23

PRICE SUMMARY SCHEDULE

ITEM NO	DESCRIPTION	TOTAL PRICE (Excl. VAT)
1	PRELIMINARY & GENERAL	
2	TOWER FOUNDATIONS	
3	STEEL LATTICE GANTRIES, STEEL TOWER STRUCTURES, CONDUCTORS AND POWER LINE HARDWARE	
4	MINOR WORKS	
5	UNIT RATES (Additional and only applicable when required by the Engineer)	
6	COMMUNITY LIAISON OFFICER (CLO)	
7	ENGINEERING CHANGES: CHANGE CONTROL / VARIATION ORDER (VO's)	
TOTAL TENDER PRICE (Excluding VAT)		
VALUE ADDED TAX		
TOTAL TENDER PRICE (Including VAT)		

SIGNATURES AND NAME OF PERSONS AUTHORISED TO SIGN TENDER

CAPACITY OF SIGNATORIES

1 _____

WITNESSES:

1 _____

2 _____

- a) The prices must be completed in pen (black) in the schedule and included in the tender document as was issued.
- b) All item/activities as listed in the bill must be priced individually and no item prices are allowed to be included somewhere else combined with other item prices. If an item/activity is not priced it would be regarded as free of
- c) This schedule will be provided on CD to tenderers in Excel with the minutes of the tender briefing meeting.
- d) The description of items and quantities must not be changed or deleted. Only changes that are minuted / instructed by the engineer will be allowed.
- e) All tenderers must tender to the above as their main offer.

CONTRACT NO: EED 22-2022.23

TENDER FOR THE SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF EQUIPMENT FOR THE CONSTRUCTION OF THE SOSHANGUVE 132KV OVERHEAD POWER LINE

PART C3: SCOPE OF WORK: CONTENTS

PART C3

SCOPE OF WORK

CONTENTS

ITEM	DESCRIPTION
1	Scope of Contract
2	Tender Clarification Meeting Venue
3	Extent of Work
4	Socio-economic plan
5	Technical Training
6	Community Liaison Officer
7	Sub-contractors and Small Medium Enterprise
8	Tender Briefing Meeting and Site Visit
9	Drawings
10	Work Breakdown, Quantities & Price Schedule
11	Evaluation Criteria
12	Alternative Offers
13	CIDB Grading
14	Surety
15	Forward Cover
16	Reference

Contract: TENDER FOR THE SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF EQUIPMENT FOR THE CONSTRUCTION OF SOSHANGUVE 132KV OVERHEAD POWERLINE

PART C3: SCOPE OF WORK

PART C3: SCOPE OF WORK

1. SCOPE OF TENDER & CONTRACT

The scope is for the design, supply, delivery, installation, testing and commissioning of the Soshanguve double circuit 132kV overhead power line with Aluminium Conductor Steel Reinforced (ACSR) BEAR conductors, as follows:

- 1.1 The scope of this tender/contract must be provided in full by one tenderer/contractor. The contractor and sub-contractors must be fully trained, experienced and competent to carry out the work according to the tender/contract and articles of agreement of the OHS-Act (Act 85 of 93) or the latest act. No training or supervision will be provided by the municipality.
- 1.2 The contractor will be responsible for the complete scope of work including the design, supply, delivery, assembly and installation of the steel monopole structures, stringing of phase and earth conductors, testing of the power line.
- 1.3 The survey and pegging of the power line route, design and casting of the tower foundations will form part of the scope. The final tower positions are to be surveyed and pegged by a professional land surveyor.
- 1.4 The tower foundations and steel monopole tower structures must be designed and certified by a registered professional engineer.
- 1.5 The contractor must comply with the minimum power line clearance requirements and make provision for crossing existing infrastructure/services including the Eskom and City of Tshwane power lines.
- 1.6 The tower positions as indicated on the drawings are only proposed positions and the final positions must be decided by the successful contractor in consultation with the Project Manager.
- 1.7 The quantities indicated against each item are only approximate figures and the City of Tshwane does not guarantee to purchase this or any quantity. Before any procurement of material is processed, the contractor must confirm and seek approval from the Project Manager.
- 1.8 The successful contractor will be required to appoint local labourers and SMME enterprises from within the borders of the municipality during the implementation of the project.

2. TENDER CLARIFICATION MEETING VENUE

Compulsory Tender Meeting will be held at Council Chambers, Centurion Offices, Cnr Rabie and Basden Streets, Lyttleton (Site Location: <https://goo.gl/maps/j6Bg3e2qgoQaHDRN9>)

Coordinates: -25.835194815840023, 28.19466014790688

Compulsory Site Inspection is at Soshanguve 132/11kV Substation, located on Soutpan Road, Soshanguve and then JJ 132/11kV substation located at corner Molefe Makinta and First Street.

3. EXTENT OF WORK

The total project work includes the following, but not necessarily in the order as listed:

3.1 Design of works

The design work will include all the following work that is specified in more detail in the Specification, Schedule of Particulars and Activity Schedule.

(The contractor's manufacturing and construction designs must be approved before manufacturing and construction can start):

- a) Design of the tower foundations, steel monopole tower structures and power line
- b) Powerline Design: Profile drawings
- c) Electrical equipment diagrams: Mostly obtained from the suppliers of the equipment.
- d) Power line route drawing: The terrain, conductor sags, monopole structures, fittings, etc.
- e) Protection system: The protection equipment system operation and control.
- f) Communication system: The control system including the Scada system.

3.2 Project Implementation Plan

- a) A Project Implementation Plan must be provided before any construction work starts.
- b) A shutdown of construction work must be provided for over the Christmas period to the New Year.

3.3 Site Works, Civil Engineering and Building Work

The site work will include all the following work that is specified in more detail in the specification, particulars and activity schedule. A professional civil and structural engineer must certify the design for the above work.

- a) Power line work: Assembly and installation of power line structures, fittings, conductors, etc.
- b) Excavations and casting of tower foundations.
- c) All the structures must be designed and tested by a qualified person and the results made available.
- d) Construction/Installation: All equipment supplied under this scope and free issue items (if any).
- e) Commissioning: The testing of all the equipment, system operation and control
- f) Switching: Arrange switching during the construction period. It may be required that due to electricity supply constraints that some work can only be done during the night and weekends after normal working hours.
- g) The Contractor will be responsible for the clearing of the servitude route including the removal of the trees and all obstructions along the power line, especially along Molefe Makinta Road.
- h) Site cleaning: Remove of all the excess material.
- i) Soil condition: All excavations for tender purposes must be based on using a TLB for excavations. Pickable and Intermediate soil will fall in this category.

3.4 Electrical Works and Mechanical Structures

The supply and installation of the following:

- a) 132kV monopole structures and associated equipment.
- b) Complete 132kV, 150/300MVA double circuit powerline between Soshanguve 132/11kV Substation to JJ 132/11kV Substation.
- c) Stringing of conductors between power line structures
- d) The earthing of the tower structures.
- e) Testing and commissioning of the Communication and Scada system interfaces at Soshanguve JJ Substation.

3.5 Commissioning of works

- a) Test all tower structures.
- b) Check and test all mechanical structures.
- c) Check and certify all civil works.
- d) A test plan and procedures must be provided before any testing starts.
- e) Supply Operating and Maintenance Manuals (O&MM) of all the equipment and the system.

3.6 CoT Safety agent

The Safety Agent for CoT will perform all his/her duties during the execution of the project in accordance with construction regulation of the OHS Act 85 of 1993 or latest version.

3.7 Other

No telephone, water and sanitary facilities are available and the Council will not provide any. All sanitary facilities shall be neat and hygienic throughout the contract period.

The Contractor shall allow in his/her tender price for his/her own accommodation and for the provision of a site office, which shall be large enough to hold site meetings to accommodate a minimum of 15 people. A table and chairs shall be provided to meet the above requirement.

4. SOCIO-ECONOMIC PLAN

- a) The contractor must submit a detailed proposal on the number of job opportunities to be created for the local community during the construction phase of the project.
- b) The contractor must indicate the number of women and youth who will benefit from the project.
- c) The contractor must employ local labourers from the wards where the project is being implemented.
- d) The Contractor must provide Personal Protective Equipment (PPE) with the EPWP branding for the EPWP local labourers.
- e) The Contractor must ensure that all the EPWP local labourers have undergone the medical tests where necessary.

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- f) The contractor must submit a monthly report on the job opportunities created in line with EPWP initiative.
- g) The contractor must provide skills development and technical training as per EPWP programme guidelines for:

CIVIL WORKS	REQUIREMENTS	NUMBER OF PEOPLE
General Workers	Not applicable	20
CLO	Matric	1

5. TECHNICAL TRAINING

- a) The contractor must provide skills development and technical training as specified in the Bill of quantities schedule for CoT employees per field of study on the following:
 1. Operators (Substation Switching Operations)
 2. Maintenance (Of Power Lines)
 3. Protection
 4. Communication

6. COMMUNITY LIAISON OFFICER

- a) The successful tenderer will be required to appoint a Community Liaison Officer in accordance with the Council policy on the recruitment of Expanded Public Works Programme (EPWP) beneficiaries.
- b) The Community Liaison Officer (CLO) will be responsible for liaising with the local community on construction activities, process any complaints from the community and convey them to the project management team.
- c) The CLO will attend all project meetings with Contractor, Project Manager and the Project Steering Committee.
- d) The agreement will make provision for the payment of the CLO by the Contractor at a salary equivalent to the City of Tshwane minimum Task Level 5 monthly notch.
- e) Only one CLO will be appointed for the project. However, should it be necessary to appoint more than one CLO, this will be permitted provided that the total monthly sum paid to all CLO's must not exceed the amount allowed for in paragraph d) above.
- f) Should the contractor experience any difficulties with the community, these challenges should immediately be brought to the attention of the Energy and Electricity Department/Project Manager who will arrange a meeting with the relevant Ward Councillor(s), Project Steering Committee and the CLO to resolve such challenges.

7. SUB-CONTRACTORS AND SMALL MEDIUM ENTERPRISE

- a) The contractor must give preference and appoint sub-contractors and Small Medium Enterprise's (SME's), preferably, from within the City of Tshwane Municipal area and Wards where the project is executed to benefit the local communities.

- b) The contractor shall sub-contract the portion of the scope of works to designated groups in accordance with the applicable legislation.
- c) Any other work beside the activities deemed to be core functions and responsibilities of the main contractor shall be allocated to sub-contractors from the designated groups. The appointed contractor shall ensure that only sub-contractors from the designated groups are appointed on the project.
- d) The contractor will be required to identify activities from the project scope which will be allocated to the local sub-contractors and SME's.
- e) The work to be sub contracted shall include among others, but not limited, to the following activities/services:

The procurement, delivery and installation of:

- i. Steel reinforcing material
- ii. Ready mix concrete
- iii. Transportation of equipment/material, etc.
- iv. Security Services

8. TENDER BRIEFING MEETING AND SITE VISIT

- a) The tender briefing meeting and site visit are compulsory, and the tenderer shall complete the tender meeting/site visit register/form at the meeting.
- b) Prospective tenderers must already be in possession of the tender document at the bid meeting and have prior studied the contents thereof obtaining the knowledge of what is required.
- c) Tender meeting and/or site visits shall be at the cost of the tenderer and the tenderer shall provide their own transport from the tender meeting place to the site.
- d) Tenderers must be on time and attend the full tender meeting and site visit (a minimum of three hours must be allowed for).

9. DRAWINGS

- a) A4 Drawings are included in the tender, but full-scale drawings will be available on request.
- b) Tenderers must provide detail drawings with their tender for the tower structures, line hardware.

10. WORK BREAKDOWN, QUANTITIES & PRICE SCHEDULE (PART C 2.1)

- a) The tenderer must complete the Schedule of Particulars and Guarantees for all items in full. Failure to do so, will result in the tender being disqualified from further evaluation.
- b) The prices must be completed in pen (black) in the schedule and included in the tender document as was issued.
- c) All item/activities as listed in the bill must be priced individually and no item prices are allowed to be included somewhere else combined with other item prices.

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- d) If an item/activity is not priced it would be regarded as free of charge.
- e) The price bill will be provided in Soft copy (Excel) to tenderers with the minutes of the tender briefing meeting.
- f) The description of items may not be changed or deleted as well as the quantities. Only changes that are minuted / instructed by the engineer will be allowed.
- g) All tenderers must tender to the above as their main offer.

11. EVALUATION OF CRITERIA

1. Functionality will be evaluated and scored out of 100 points. Bidders are required to obtain a minimum of 70 evaluation points on functionality in order to proceed on to the next stage where they will be evaluated on Price and B-BBEE status.
2. The final evaluation will be done according to the 90/10 preference point system.

Table 1: SCORECARD FOR FUNCTIONALITY

NO	CRITERIA	SUB-CRITERIA	SCALE	WEIGHT	HIGHEST POSSIBLE SCORE
1	FINANCIAL CAPABILITY The tenderer must submit the Bank Rating not older than three months indicating their Bank Rating prior to the closing of the tender at a minimum value of R60 000 000. (Attach original copy of Bank Stamped Letter or original certified copy of Bank Stamped Letter)	Bank Rating D	0	5	25
		Bank Rating C	3		
		Bank Rating B	4		
		Bank Rating A	5		
2	TRACK RECORD AND TECHNICAL EXPERTISE The tenderer must submit a list and supporting documents of overhead power line projects successfully completed by the tenderer. The scope of work of each project listed must include among others the minimum of the following activities - the design, supply, installation, testing and commissioning of equipment for	Only projects with verifiable documentary proof in the form of both appointment letter(s) and relevant completion certificate(s) will be considered and awarded points.			
		Appointment letter and completion certificate for at least 1 project	1		
		Appointment letters and completion			

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	the construction and /or upgrading of overhead power lines with a with a minimum rated voltage of 88kV. The tenderers should only list and submit evidence for power line projects with a minimum contract value of R30 million. Complete Form RD.D.1 and attach <u>signed</u> copies of contract appointment letters and project completion certificates for work successfully completed by the tenderer (Failure to complete Form RD.D.1 and attachment of supporting documents will result in automatic disqualification)	certificates for at least 2 projects	2	10	40
		Appointment letters and completion certificates for at least 3 projects	3		
		Appointment letters and completion certificates for at least 4 projects	4		
3	KEY PERSONNEL EXPERIENCE The tenderer must provide the technical qualifications of personnel to be employed on this contract with experience on projects of similar or greater value, nature, scope and complexity which the personnel executed and completed in the past ten years. CV's should include qualifications, professional registration as well as specific construction experience per project. It is compulsory to complete Form RD.D.2 and attach comprehensive CVs and certified copies of qualifications of each key personnel. Points will only be allocated for key personnel with a minimum of five (5) year's related experience in the design and construction of overhead power lines with a rated voltage of 88kV and above.	The tenderer must have personnel with the necessary technical experience in Electrical Engineering: The following criteria will be applied for each personnel. 0 points = For personnel with less than 5 years' experience in the project management environment 1 point (where applicable) = For personnel with more than 5 years' experience in the project management environment. (Note: Points must be added for each personnel for the total points allocation)			
Senior Manager or Director	1	5	15		
Project Engineer	1				
Site Supervisor	1				

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4	LOCAL ECONOMIC PARTICIPATION (Location of Business) Complete Form RD.D.4 and attach the copies of the municipal rates and taxes and/or electricity account in the name of the tenderer.	Outside Gauteng (Within South African boarder)	1	5	15
	Gauteng	2			
	City of Tshwane	3			
5	QUALITY MANAGEMENT SYSTEM The tenderer must describe the quality management system implemented by the tenderer during the construction phase of the project. The tender must attach the ISO 9001:2015 quality management accreditation certificate with the tender.	ISO 9001: 2015 Quality Management Compliance Certificate	1	5	5
		Non - submission of ISO 9001: 2015 Quality Management Compliance Certificate	0		
HIGHEST POSSIBLE SCORE					100

12. ALTERNATIVE OFFERS

- Alternative offers will only be considered if tenderer(s) have submitted a fully completed main offer. For alternative offers a complete separate detailed activity, quantities and bill/price schedule must be submitted as a separate document.
- Tenderers must for each offer, submit electronic copies of the entire bid document either by memory USB flash disk together with the hard copy of the Bid/Proposals"

13. CONSTRUCTION INDUSTRY DEVELOPMENT BOARD GRADING

- Only those tenderers who are registered with the Construction Industry Development Board CIDB or are capable of being so prior to the evaluation of submissions, in a contract grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for an **8EP or higher** class of construction work, are eligible to submit tenders.
- Joint ventures are eligible to submit tenders provided that: -
 - Every member of a joint venture is registered with the CIDB within 10 days of the closing date of tenderers.
 - Three contractors registered in contractor grading designation **7EP** and,

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- The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor designation in accordance with the sum tendered for an **8EP** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations.

14. SURETY

- a) The Tenderer must supply a letter of intent, from a financial institution, with the tender for providing a surety of 10% of the tender price.
- b) The Contractor must provide a surety of 10% of the contract price within 14 days after appointment/award.
- c) The Contractor must carry the cost to provide the surety.

15. FORWARD COVER

- a) Forward cover to be taken by the successful bidder for all the imported equipment.
- b) The contractor must carry the cost of the forward cover to be provided for Soshanguve to JJ substation powerline.

16. REFERENCE

- a) The following words will have the same meaning:
 - CoT and CTMM
 - BID(S) and TENDER(S).
 - BIDDER(S) and TENDERER(S)
 - BIDDING and TENDERING

If anywhere in this document it still refers to Bid(s), Bidder(s) and Bidding it shall be replaced with Tender(s), Tenderer(s) or Tendering.