

BILL NO 1 - PRELIMINARY AND GENERAL					
Electrification of Shayamoya			PRICE (EXCL VAT)		
Item	Description	Unit	Quantity	Rate	Total Price (R)
1.1	<b>Conditions of Contract</b> Contractual requirements including, amongst others, Insurance of Works, Transport & Residence, Preparation of Site Camp, maintenance of fire-breaks, Dismantling of Site Camp & restoration to original condition, Attendance to meetings, liaison & co-ordination with TSC, roads authority, SAPS for outages, Handing Over as per TQRRP020, weekly stats reporting, monthly man hours reporting, etc...	Item	1,00		
1.2	<b>Site Store and Office</b>  The Electrical contractor shall provide for a temporary site office, for his own use where all drawings and specifications shall be kept in accordance with the provisions of the specifications, as well as provision of safe and adequate storage space for all material and the removal of such on completion.	Per Month	3,00		
1.3	<b>Materials Management</b> Allow for co-ordination with Eskom, receipt and handling of "free-issue" materials from the New Germany stores, including the transport, loading & offloading, safekeeping & storage and the maintenance of a record keeping system to track the issue of materials for incorporation into the works. Eskom to supply free issue material to site which include: <b>Section Breaker, Transformers, Meters and Bases, Fox Conductor, LV ABC Conductor, 4 and 10mm² Airdac, Labels &amp; Seals.</b>	Item	1,00		Rate Only
1.4	<b>Sample Line</b>  Allow for the co-ordination with T&Q & the construction of a sample line as detailed in EI048MVL & Eskom specifications.	Item	1,00		
1.5	<b>As-built drawings (on Survey Department approval)</b>  Allow for the marking up, annotating of a set of drawings to accurately represent the works constructed, the co-ordination with the surveyor on site for re-pegging where appropriate and supply to the Engineer for approval (2-5m accuracy). Engineer supplies only 3 sets of Construction Drawings. Supply As-Built to Engineer 4 weeks before Outage, to allow the CoW to verify and forward to Survey for approval.	Item	1,00		
1.6	<b>Safety Regulations</b>  The Electrical Contractor is to invoke adequate allowances to abide by the Construction Regulations that has been promulgated in the Government Gazette in July 2003 extracted from the OHS ACT 85 of 1993. This will include the services of a competent safety officer that will ensure that all requirements pertaining to the construction regulations have been met for the duration of the contract. Include, amongst others, the preperation, implementation, updating, amending, checking and upon completion of the works and handing over of the H&S file to the Engineer.				
1.6(a)	Legal and contractual compliance as per OHS Act, Construction Regulations & Eskom Safety Regulations.	Item	1,00		
1.6(b)	Personal protective Equipment. The contractor is to make adequate provision for the supply and management of acceptable safety clothing for his/her duly appointed casual labour in order to facilitate compliance with the OHS ACT 85 of 1993.	per person	20,00		
1.6(c)	Fall arrest system/Ladders/Climbing Irons etc...	per week	12,00		
1.6(d)	Health & Safety Plan, File & and requirements as per Works Information and Eskom DDT standards.	Item	1,00		
	<b>Labour Intensive Works</b> <b>Expanded Public Works Programme (EPWP)</b>				
1.7	Compliance with the EPWP reports	Per Month	4,00		
1.8	PC Amount for CLO	Sum	1,00	R 18 000,00	R 18 000,00
	<b>Other</b>				
Note	The Contractor is to list any other items that he deems to be necessary & attach them herein.				
	Supply, Install and remove on completion of a Project Notice Board, as per Municipality's requirements	Item	1,00		
1.9	Security	Per Month	3,00		
1.10	PC amount for Pegging	Sum	1,00	R 25 000,00	R 25 000,00
	TOTAL : Carried forward to summary				

BILL NO 2 - MEDIUM VOLTAGE SWITCHGEAR, SECTIONALISERS, TRANSFORMERS, ETC									
Electrification of Shayamoya				PRICE (EXCL VAT)					
Item	Description	RIFICATION OF	Unit	Quantity	Supply Rate	Supply Total	Install Rate	Install Total	Total Price (R)
<b>Transformers (Coastal Spec.) - pole mounted</b>									
Installation of existing or new Eskom-supplied transformers on an appropriate structure and secure as required including the termination of cables and conductors, the provision of suitable lugs for 35, 50 or 70mm conductor as required & all accessories. Excluding cable, conductors, and the transformer structure. Include transport, offloading/loading, safe storage from appropriate Eskom store.									
2.1	NEW Transformer 32kVA, 22kV/+460V/-460V	3021	No	0					
2.2	NEW Transformer 64kVA, 22kV/+460V/-460V	3021	No	3					
<b>Medium Voltage Surge Arrestors</b>									
Supply, deliver, off load on site and safely store on site the following surge arrestors, complete with galvanised steel mounting brackets for securing the surge arrestor, nuts, bolts, washers and lock washers as specified. Secure the surge arrestors and brackets to the transformer as specified including the termination of conductors. Excluding the conductors and transformer. Discharge current 10kA.									
2.3	11kV, MCOV Surge arrestor, Inland	3100	No	0,00					
<b>Medium Voltage Sectionalisers and Links</b>									
Supply and install link isolators as detailed including the installation of crossarm brackets and the termination of conductors and including the drilling of holes in wooden poles as required.									
2.4	Section Links, Single Pole (2.5m X-arm) (three phase)	1848	No	0					
2.5	Equipment Links, Single Pole (2.5m X-arm) (dual phase)	1849	No	3					
2.6	Equipment Links, Single Pole (2.5m X-arm) (three phase)	1849	No	0					
<b>Neutral Surge Arrestor</b>									
Supply and install a LV surge arrestor including lugs and galvanised bolts									
2.7	6kV, 10kA Surge Arrestor	3088	No	3					
<b>Transformer &amp; Equipment Earthing</b>									
Supply and install all materials for the complete earthing of transformer structures for ABC networks as specified. Included in the rate shall be all required spikes, insulated copper conductor, galvanised conduits, staples, bare copper, excavations, backfilling, etc. The rate shall allow for all required MV earth electrodes, consisting of four earth spikes in accordance with the Distribution specifications, Part 2. Additional earth spikes/conductor shall be measured elsewhere if required.									
2.8	MV Earth	1860	No	0					
2.9	Section Breaker Earthing 22kV, 400A, 8kA with IRTU	1829B	No	0					
TOTAL : Carried forward to summary				TOTALS					

**BILL NO 3 - MEDIUM VOLTAGE OVERHEAD DISTRIBUTION SYSTEM**

Electrification of Shayamoya								
Electrification of Shayamoya				PRICE (EXCL VAT)				
Item	Description	DDT Ref	Unit	Quantity	Supply Rate	Supply Total	Install Rate	Total Price (R)
	<b>Conductor</b> Supply, safely store on sealed drums with ends adequately secured and transport to site conductor as specified. String conductor as specified including splices, jumper conductor ties, strain clamps, suspension clamps, tensioning, sagging, etc.							
Note	The following dimensions will all be "Conductor Length" with 10% is allowed for slack & wastage. Additional wastage/slack is for Contractor's account.							
3.1	ACSR Fox - 8.37D	3136	m	1 701				
	<b>MV STRUCTURES</b> Allow for the following structures and insulator assemblies in accordance with the specifications as shown in the drawings. <b>Include</b> the specified crossarms, drilling of holes and treating of such holes, the provision of the U-nails and earthwire in accordance with Eskom specifications. All jumpers to links and transformers to be installed with PVC black pipe. <b>Supply and installation</b> of 15m of 3/3.35x1100MPa steel wire for a BIL for each pole structure as per Eskom specification. <b>Exclude</b> the supply and planting of poles, stays and struts which are measured elsewhere. Insulators as per EI090SS. Include BIL insulation co-ordination for shared MV & LV structures as per 03TB-34 or later approved Eskom standard.							
	<b>Supply and install</b> all material as specified for the construction of the following MV structures. Including bonding of hardware and earthing. All excavations, poles, crossarms and stays are measured elsewhere.							
	<b>Note:</b> RX refers to statutory road crossings with the relevant DDT0257-10kN-31mm/kV post insulator, full wrap tie or DDT0251-40kN-31mm/kV longrod with pistolgrips.							
	<b>2 PHASE STRUCTURES General Arrangement</b> Phase / phase – Staggered Vertical (600mm spacing) – Intermediate – 0° Deviation	1310	No	0				
3.2	Phase / phase – Vertical (600mm spacing) – Intermediate – Small(1°-±10°) Deviation	1311	No	2				
3.2	Phase / phase – Vertical (600mm spacing) – Strain - 0° Deviation	1313	No	3				
3.3	Phase / phase – Vertical (600mm spacing) - Strain - Small(1°-30°) Deviation	1314	No	2				
3.4	Phase / phase – Vertical (600mm spacing) – Strain - Large(30°-90°) Deviation	1315	No	1				
3.5	Phase / phase – Vertical (600mm spacing) – Strain - Terminal	1316	No	6				
3.6	<b>3 PHASE STRUCTURES General Arrangement</b> 3 Phase - Staggered Vertical (600mm spacing) – Intermediate - 0° Deviation	1710	No					Rate Only
3.7	3 Phase - Vertical (600mm spacing) - Strain – Small(1°-30°) Deviation	1714	No					Rate Only
3.8	3 Phase - Vertical (600mm spacing) - Strain – Large(30°-90°) Deviation	1715	No					Rate Only
3.9	3 Phase - Vertical (600mm spacing) - Strain – Terminal	1716	No					Rate Only
3.10	3 Phase - Delta / 2,5m Wood X-arm - Strain – 0° Deviation	1743	No					Rate Only
3.11								
	Amount carried over to next page							



**BILL NO 4 - SUPPORT FOR OVERHEAD RETICULATION**

Electrification of Shayamoya									
				PRICE (EXCL VAT)					
Item	Description	DDT Ref	Unit	Quantity	Supply Rate	Supply Total	Install Rate	Install Total	Total Price (R)
Note	<b>Poles and Crossarms</b> Supply and safely store the following poles. Transport to site of works and install pole in excavated hole, including cutting and scaffolding, kicking blocks, bonding, treating, etc. Excavations and compaction are measured elsewhere.								Rate Only
	4.1 7m Pole, 120-139mm top diameter	0050	No	0					
	4.2 9m Pole, 140-159mm top diameter	0055	No	84					
	4.3 11m Pole, 160-179mm top diameter	0051	No	4					
	4.6 11m Pole, 180-199mm top diameter	0051	No	3					Rate Only
	<b>Stays, Flying Stays and Anti-Climbing Devices</b> The unit price for a standard stay and an aerial stay shall exclude the wooden poles, but include the stay wire, stay rods, insulators, stay plate, stay guards, bitumastic paint, guy grip dead end, earthing of stay, line splice, precast concrete slabs, pole clamp, nuts bolts and washers etc.								
	The following stays shall be in accordance with the specification and shall include a stay plate								
	4.7 MV Stay (DDT0341 rev 9, BIL 40kV & 150kV)	0341	No	19					
	4.8 LV Stay	0341	No	84					
	The following flying stays shall be in accordance with the specifications and shall include poles & excavation.								
	4.9 MV Flying Stay	0343	No	0					
	The following struts shall be in accordance with the specifications and shall include poles & excavation.								
	4.10 MV Strut	0342	No	1					
	4.11 LV Strut	1167	No	7					
Amount carried over to next page									

Item	Description	DDT Ref	Unit	Tender Quantity	Supply Rate		Install Rate		Total Price (R)
	Amount brought forward from previous page								
	<b>Excavations and Compaction</b>								
Note	<p>The excavations for service connections are measured elsewhere</p> <p><b>Determination of pole positions, excavate, and supply a mechanical boring device if required. The rate shall include backfilling, compaction to 93% MOD AASHTO density, and where necessary the supply and transportation of suitable ground as may be required to receive the desired compaction, except where cement is specified. Any damage to existing services shall be made good by the Contractor at his own expense and to the approval or the PM(C).</b></p> <p>Before excavation work begins the Contractor shall evaluate the stability of the ground before excavation begins. Contractor shall use warning signs, positioned next to an excavation within which persons are working or carrying out inspections. Ref CR (11)</p>								
4.12	Hole for 7m pole - 1.3m deep - pickable	0332	No	0					
4.13	Hole for 7m pole - 1.3m deep - compressor drilling	0332	No	0					
4.15	Hole for 9m pole - 1.5m deep - pickable	0332	No	50					
4.16	Hole for 9m pole - 1.5m deep - compressor drilling	0332	No	34					
4.17	Hole for 11m pole - 1.8m deep - pickable	0332	No	8					
4.18	Hole for 11m pole - 1.8m deep - Compressor drilling	0332	No	4					
4.19	Hole for 12m pole - 2.0m deep - Compressor drilling	0332	No						
4.20	Hole for MV stay - 1.8m deep - pickable	0350	No	11					
4.21	Hole for MV stay - 1.8m deep - Compressor drilling	0350	No	8					
4.22	Hole for LV stay - 1.4m deep - pickable	0350	No	36					
4.23	Hole for LV stay - 1.4m deep - compressor drilling	0350	No	24					
4.24	Hole for MV strut - 0,5m deep - pickable	0342	No	1					
4.25	Hole for MV strut - 0,5m deep - Compressor drilling	0342	No	0					
4.26	Hole for LV strut - 1.3m deep - pickable	0342	No	0					
4.27	Hole for LV strut - 1.3m deep - compressor drilling	0342	No	0					
4.28	Provisional blasting - Up to 2,2m deep. Each hole to be verified by Clerk of Works. Develop a method statement in accordance with explosives legislation, by an appointed person who is competent in the use of explosives for excavation work and that the procedures therein are followed. Ref CR (11)		No	Prov					
4.29	Rock excavation (the contractor is to provide adequate measures to ensure a rock hole be excavated to the correct depth to facilitate the correct infrastructure, this may include the excavation per rock hole by mechanical means viz. Compressors dependent on diesel fuel to accommodate Jackhammer drilling). These Rock Holes to be verified by the relevant Clerk of Works. Ref CR (11)		No	Prov			R 15 000,00	R 15 000,00	Rate Only
	<b>Pole Labels</b>								
	<p><b>Install labels on all poles in accordance with the specifications including the provision of all fixing materials. Transport from Eskom stores to site to be priced in Preliminary &amp; General 1.3. Labels to the Eskom Standard SCSSCAAP5, TQGHSP05 and TQCSS005. Dynatape, masking tape or Hand written with permanent marker type labels are not to be considered for operational labelling under any circumstances.</b></p>								
4.30	Equipment labels		No	20					
4.31	Mosdorfer fuse rating labels (transformers)		No	6					
4.32	Fuse - "Warning. Open all fuses before working on line"		No	11					
4.33	Transformer Max fuse notification label		No	7					
4.34	Feeder Max Fuse notification label		No	11					
4.35	Danger Labels (transformers, links, anti-climbings)	3202	No	5					
4.36	LV Feeder Labels		No	11					
4.37	Pole Top Box Phase Labels		No	0					
	TOTAL : Carried forward to summary			TOTALS					

Item	Description		Unit	Quantity	Supply Rate		Install Rate		Total Price (R)
	Amount brought forward from previous page								
	<b>General Items</b>								
4.38	<b>Supply and install labels Spiral Vibration Dampers</b> Spiral Vibration Dampers (Hare & Fox)	3175	Each	1					Rate Only
	<b>Supply and Install Anti-Climbing Devices as per the latest DDT Standards.</b> Anti-Climbing Device as per DDT3170. Including the removal of existing spikes. Galvanised wire per DDT3170. Galvanises staples per DDT3129. Install on trfr str, struts, parallel MV stay wires, recloser str, OOL trfr str, etc, structures where meter boxes or equipment is installed <2m above ground, any str having cable secured by means of strapping <0.5m apart, any climbable pole str, apparatus etc as per DDT standard.								
4.39		0399	per str						
4.40	Supply and Install, where MV & LV Earths are on the same structure, UV protected black PVC pipe of length 1.2m on each earth downwire, cutting the top and bottom of the pipe at 45deg, split the pipe so as to insert the MV/LV earth and installing clout nails at the bottom and top.		per str						
	TOTAL : Carried forward to summary			TOTALS					



Item	Description	DDT Ref	Unit	Tender Quantity	Supply Rate		Install Rate		Total Price (R)
	Amount brought forward from previous page								
5.10	Dual Phase ABC Intermediate Assembly	1145	No	29					
5.11	Dual Phase ABC Terminal Assembly	1146	No	21					
5.12	Dual Phase ABC Strain Assembly (0-60 deg)	1147	No	13					
5.13	Dual Phase ABC Strain Assembly (60-90 deg)	1148	No	9					
5.14	Dual Phase ABC Tee from Intermediate	1149	No	6					
5.15	Dual Phase ABC Cross Intermediate Suspension assembly	1151	No	3					
5.16	Dual Phase ABC Tee from Strain	1152	No	3					
5.17	Three Phase ABC Intermediate Assembly	1100	No	0					Rate Only
5.18	Three Phase ABC Terminal Assembly	1120	No	0					Rate Only
5.19	Three Phase ABC Strain Assembly (0-60 deg)	1121	No	0					Rate Only
5.20	Three Phase ABC Strain Assembly (60-90 deg)	1122	No	0					Rate Only
5.21	Three Phase ABC Tee from Intermediate	1140	No	0					Rate Only
5.22	Three Phase ABC Cross Intermediate assembly	1141	No	0					Rate Only
5.23	Three Phase ABC Tee from Strain	1142	No	0					Rate Only
	<b>LV Fuse Switch Units</b>								
	<p>Supply, deliver to site, off load on site and safely store. The fused switch shall be supplied complete with the pole mounting bracket, nuts, bolts, washers, etc. for securing the unit to the wooden pole. The fuses shall be supplied with the fuse switch unit. Fuse ratings shall be as shown on the drawings. Install the on load fused disconnecting switch on the transformer structure including the drilling of holes as required, including the termination of the LV ABC to the unit. Fuse ratings below allow for 120% overload.</p> <p>One fuse unit is for the transformer and one unit per LV feeder for isolation/protection.</p>								
5.24	80A Dual Phase Load disconnecting switch MORSDORPHER Fuse	0309	No	9					
5.25	160A Three Phase Load disconnecting switch MORSDORPHER Fuse	0309	No	0					Rate Only
	Amount carried over to next page								

Item	Description	DDT Ref	Unit	Tender Quantity	Supply Rate		Install Rate		Total Price (R)
	Amount brought forward from previous page								
Note	<b>Earthing of LV Network</b>								
	All MV transformer earthing is measured elsewhere and all LV earths per structure are measured with the structure. This section is intended for LV earths at transformers.	0637							
	Allowance shall be made for the testing (including earth loop impedance) of the earth resistance for the entire reticulation system in accordance with the TN-C-S earthing system as defined in the Distribution Standard Part 2 and any earth tests which may be required in terms of the standard and detailed specifications. Use 2 x H-Crimps - neutral connection point.								
	5.26 LV Earth (Crowsfoot)	0627	No	11					
	<b>LV Pole Mounted Service Boxes (Outdoor)</b>								
	Supply and install on a wooden and/or concrete pole a pole mounted distribution box as specified complete with pole mounting brackets, cable ties, PG clamps, miniature circuit breaker(s), neutral, phase and earth bars, insulated copper tails for connecting to LV ABC, insulation piercing connectors and factory installed cable openings. Included shall be the stainless steel strapping and buckles and terminations of the tails onto the LV ABC.								
	5.27 1-4. York type box, complete with insulated copper tails, insulation piercing connectors and nylon compression glands, per DDT0180.	3055	No	69					
	<b>Testing</b>								
	Allowance shall be made for the testing of each LV ABC distributor on accordance with the project specification. Included shall be the provision of test certificates and all documentation as required.								
	5.28 LV Test, per zone. Ref. SCSASABZ1		No	3					
	<b>General</b>								
5.29	Supply and install ABC Full tension Joints as per the DT Standards - Dual phase ABC (35mm <sup>2</sup> )		Ea	Rate Only					
5.30	Supply and install ABC Full tension Joints as per the DT Standards - Three phase ABC (35mm <sup>2</sup> )		Ea	Rate only					
5.31	Supply and install ABC Full tension Joints as per the DT Standards - Three phase ABC (70mm <sup>2</sup> )		Ea	Rate only					
	TOTAL : Carried forward to summary			TOTALS					

**BILL NO 6 - HOUSE CONNECTIONS**

Electrification of Shayamoya					PRICE (EXCL VAT)				
Item	Description	DDT Ref	Unit	Quantity	Supply Rate	Supply Total	Install Rate	Install Total	Total Price (R)
	<b>House Connections</b>								
	Installation, testing, commissioning complete including CoC, IC's, sealing and as built drawing on completion. Includes installation of EMU in PTB, Ready Board, CIU LCD Keypad, Meter Seal and associated accessories. Make good house walls. Poles and excavations are measured elsewhere.								
6.1	Type A	0360	No	74					
6.2	Type B - (service pole)	0361	No	15					
	<b>Conductor</b>								
Note	Measured lengths for stringing shall be net line route lengths and unit rates shall include for sag, cut-offs etc.								
	<b>Installation including all glands, lugs, shrouds, termination and connections as required. Include safe storage, transport to site and stringing. Connect power (L-N) from EMU to Ready Board (E/L &amp; MCB) and Comms pair from EMU to CIU.</b>								
6.3	4 mm² AIRDAC		m	3071					
	<b>Ecu's and Passive Bases</b>								
6.4	METER, SPLIT METER TOKEN 20A D3145		No	89					
6.5	PASSIVE BASE UNIT, ECU / CBU WITH RAIL D3171		No	89					
	<b>Sundry Items</b>								
	<b>Supply and safely store the following poles. Transport to site of works and install pole in excavated hole, including cutting and scaffing, kicking bolts, bonding, treating, etc. Excavation and compaction are measured elsewhere.</b>								
6.6	5m pole, 80-100mm top diameter	0058A	No	Rate Only					
6.7	7m Pole, 100-120mm top diameter	0050B	No	15					
6.8	Install 'Unique Seals' and record on Control Sheet and PCS file. Two seals per unit.		No	89					
6.9	Submit populated <b>Control Sheet</b> and <b>PCS CorDaptix</b> information to the Project Engineer upon the successful energising of a customer. Payment will only be made upon the successful loading of the Data ontoMunicipality's customer database.		No	89					
	<b>Excavations and Compaction</b>								
	<b>Determination of pole positions, excavate, and supply a mechanical boring device if required. The rate shall include backfilling, compaction to 93% MOD AASHTO density, and where necessary the supply and transportation of suitable ground as may be required to receive the desired compaction, except where cement is specified. Any damage to existing services shall be made good by the Contractor at his own expense and to the approval or the PM(C).</b>								
6.10	Hole for 5m service pole - 1.0m deep		No	0					
6.11	Hole for 7m service pole - 1.3m deep		No	15					
	TOTAL : Carried forward to summary			TOTALS					

FINAL SUMMARY				
Electrification of Shayamoya		PRICE (EXCL VAT)		
Item	Description	Total Supply	Total Install	Total
1	PRELIMINARY AND GENERAL			
2	MEDIUM VOLTAGE SWITCHGEAR, SECTIONALISERS, TRANSFORMERS, ETC.			
3	MEDIUM VOLTAGE OVERHEAD DISTRIBUTION SYSTEM			
4	SUPPORT FOR OVERHEAD RETICULATION			
5	LOW VOLTAGE OVERHEAD DISTRIBUTION LINES			
6	HOUSE CONNECTIONS			
7	<b>SUB TOTAL A</b>			
8	<b><u>VAT</u></b>			
9	<b>TOTAL INCLUSIVE OF VAT</b>			