

Mandatory Acceptance of rates document

| Provision of Control Plant | | | | Proposed Rates | |
|------------------------------------|--|----------------------------|-----|----------------|---------------------------------|
| Item No. | Description of the item | Unit | Qty | Rate | |
| | | | | Suppl | Inst |
| 1 | PRELIMINARIES | | | | |
| 1.1 | <u>Eskom's specific requirements</u> | | | | |
| 1.1.1 | Contractual requirements | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.1.2 | Establishment of facilities on site such as plant, sheds, water, electricity, Lighting, ect. | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.1.3 | Removal of site establishment | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2 | <u>Time Related</u> | | | | |
| 1.2.2 | Operation & maintenance of facilities | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2.3 | Supervision | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2.4 | Company & head office costs | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2.5 | Security Services | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2.7 | Accommodation | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.2.8 | Personnel transport | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.3 | <u>Construction regulations:</u> | | | | |
| 1.3.1 | Construction regulations requirements | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.3.2 | SHEQ Compliance | Percentage of Contrcat Sum | 1 | Not Applicable | |
| 1.3.4 | HV Induction as per Eskom requirement | Percentage of Contrcat Sum | 1 | Not Applicable | |
| Subtotal carried to Summary | | | | | 12% of labour total only |

| | | | | Proposed Rates | |
|------------------------------------|--|------|-----|----------------|------------|
| Item No. | Description of the item | Unit | Qty | Rate | |
| | | | | Suppl | Inst |
| 2 | <u>YARD AC AND ACDC BOARDS</u> | | | | |
| 2.1 | Swing Frame top entry(2400 x 600 x 800mm) with Blanking plates | Ea | 1 | Not Applicable | R 1,635.45 |
| 2.2 | YARD AC BOARD | ea | 1 | Not Applicable | R 618.65 |
| 2.3 | ACDC MODULES | ea | 1 | Not Applicable | R 618.65 |
| Subtotal carried to Summary | | | | R | |

| Item No. | Description of the item | Unit | Qty | Rate | |
|------------------------------------|----------------------------------|------|-----|----------------|----------|
| | | | | Suppl | |
| 3 | <u>DC Systems</u> | | | | |
| 3.1 | Sub Rack Battery Charger | ea | 1 | Not Applicable | R 501.09 |
| 3.2 | 1.1kW SMR Module | ea | 1 | Not Applicable | R 501.09 |
| 3.3 | Connector, cell inter-row type 1 | ea | 1 | Not Applicable | R 501.09 |
| 3.4 | Terminating device | ea | 1 | Not Applicable | R 270.26 |
| 3.5 | Cell, Batt | ea | 1 | Not Applicable | R 447.61 |
| 3.6 | Stand, Batt | ea | 1 | Not Applicable | R 447.61 |
| 3.7 | Battery Cabinet | ea | 1 | Not Applicable | R 501.09 |
| 3.8 | Maintenance & Safety Kit | ea | 1 | Not Applicable | R 447.61 |
| Subtotal carried to Summary | | | | R | |

| Item No. | Description of the item | Unit | Qty | Rate | |
|----------|---------------------------|------|-----|----------------|------------|
| | | | | Suppl | |
| 4 | <u>TELECONTROL</u> | | | | |
| 4.1 | Power Supply Unit | ea | 1 | Not Applicable | R 2,278.60 |

| 4.2 | RTU: Config | ea | 1 | Not Applicable | R | 2,278.60 |
|---------------------------------|---|----------|-----|-----------------------|---|----------|
| 4.3 | Swing Frame top/bottom entry | ea | 1 | Not Applicable | R | 2,278.60 |
| 4.4 | Additional Card/s | ea | 1 | Not Applicable | R | 600.28 |
| 4.5 | Install IDF Rack | ea | 1 | Not Applicable | R | 618.65 |
| 4.6 | Install RS485 convertor rack | ea | 1 | Not Applicable | R | 618.65 |
| 4.7 | Install RS485 convertor | ea | 1 | Not Applicable | R | 618.65 |
| 4.8 | Install RTU - IDF cables | ea | 1 | Not Applicable | R | 249.47 |
| 4.9.1 | Telecomms option: Digital area Radio QR450 | ea | 1 | Not Applicable | R | 150.01 |
| 4.9.2 | UHF Antenna CR400, Bracket | ea | 1 | Not Applicable | R | 102.87 |
| 4.9.3 | Coax Cable LMR400 20m | ea | 1 | Not Applicable | R | 104.86 |
| 4.9.4 | Connectors, Fly Lead | ea | 1 | Not Applicable | R | 23.26 |
| 4.9.5 | Comms survey, Install, Config, Commission | ea | 1 | Not Applicable | R | 1,933.37 |
| | Note: | | | | | |
| | This will be done by Telecontrol personnel in the Zone. Any other option (Micro wave, Fibre, PLC etc) will be done by Eskom Telecomms. | | | | | |
| | | | | | | |
| Subtotal carried Summary | | | | R | | |
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| | | | | Proposed Rates | | |
| Item No. | Description of the item | Unit | Qty | Rate | | |
| | | | | Suppl | | |
| 5 | MEASUREMENTS AND METERING TARIFF AND STATISTICAL | | | | | |
| 5.1 | Swing Frame top entry(2400 x 600 x 800mm) with Blanking plates | Ea | 1 | Not Applicable | R | 1,552.85 |
| 5.2 | Meter Module complete | ea | 1 | Not Applicable | R | 1,453.73 |
| 5.3 | QOS unikt VectoGraph | ea | 1 | Not Applicable | R | 913.10 |
| 5.4 | Voltage selection module | ea | 1 | Not Applicable | R | 654.16 |
| 5.5 | Power Meter Class 0.5 | ea | 1 | Not Applicable | R | 606.15 |
| 5.6 | Power Meter Class 0.2 | ea | 1 | Not Applicable | R | 606.15 |
| 5.7 | Trucom Smartoo GSM/GPRS Metering Modems | ea | 1 | Not Applicable | R | 467.29 |
| 5.8 | Modem module with trunking | ea | 1 | Not Applicable | R | 765.28 |
| 5.9 | Quality of Supply Module Complete | ea | 1 | Not Applicable | R | 594.83 |
| 5.10 | Interposing module | ea | 1 | Not Applicable | R | 613.71 |
| | | | | | | |
| Subtotal carried Summary | | | | R | | |
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| | | | | Proposed Rates | | |
| Item No. | Description of the item | Unit | Qty | Rate | | |
| | | | | Suppl | | |
| 6 | CABLES & ACCESSORIES | | | | | |
| 6.1 | CABLES & ACCESSORIES | | | | | |
| 6.1.1 | Cable Glands - No.0 | Ea | 1 | 34.41 | R | 33.83 |
| 6.1.2 | Cable Glands - No.1 | Ea | 1 | 34.41 | R | 33.83 |
| 6.1.3 | Cable Glands - No.2 | Ea | 1 | 64.79 | R | 63.68 |
| 6.1.4 | Cable Glands - No.3 | Ea | 1 | 85.26 | R | 59.91 |
| 6.1.5 | Shroud for gland - No.0 | No | 1 | 7.54 | R | 7.42 |
| 6.1.6 | Shroud for gland - No.1 | No | 1 | 68.54 | R | 61.26 |
| 6.1.7 | Shroud for gland - No.2 | No | 1 | 92.23 | R | 37.97 |
| 6.1.8 | Shroud for gland - No.3 | No | 1 | 105.93 | R | 52.07 |
| 6.1.9 | Consumables | | | - | R | - |
| 6.1.10 | Cable Ties | per 100g | 1 | 92.23 | R | 37.97 |
| 6.1.11 | Lugs | per 100g | 1 | 105.93 | R | 52.07 |
| 6.1.12 | Bolts & Nuts | kg | 1 | 118.40 | R | 73.51 |
| | | | | | | |
| Subtotal carried Summary | | | | | | |

| Item No. | Description of the item | Unit | Qty | | |
|---------------------------------|--|----------|-----|-----------------------|------------|
| | | | | | |
| 6 | MV BUSBAR ARC PROTECTION UNIQUE CABLES | | | | |
| 6.2 | MV BUSBAR ARC PROTECTION UNIQUE CABLES | | | | |
| 6.2.1 | 2 CORE SCREEN CABLES | M | 1 | - | R 5.93 |
| 6.2.2 | 4PR FLEX CABLES | M | 1 | - | R 5.93 |
| 6.2.3 | Install arc sensor/s to slave relays cables | M | 1 | - | R 5.93 |
| 6.2.4 | Install arc sensors | Ea | 1 | - | R 427.93 |
| 6.2.5 | Install slave relays | Ea | 1 | - | R 427.93 |
| | Consumables | | | | |
| 6.2.6 | Cable Ties | per 100g | 1 | 92.23 | R 37.97 |
| 6.2.7 | Lugs | per 100g | 1 | 105.93 | R 52.07 |
| 6.2.8 | Bolts & Nuts | kg | 1 | 118.40 | R 73.51 |
| Subtotal carried Summary | | | | R | |
| | | | | Proposed Rates | |
| Item No. | Description of the item | Unit | Qty | Rate | |
| | | | | Suppl | |
| 7 | INSTALLATION OF EQUIPMENT AND CABLES: | | | | |
| 7.1 | Installation Supervision / Authorised ORHVS person | Hrs | 1 | Not Applicable | R 291.08 |
| 7.2 | Installation of Panels (Protection Panel) | Ea | 1 | Not Applicable | R 2,278.60 |
| 7.3 | Assemble & install battery stand | Hrs | 1 | Not Applicable | R 545.15 |
| 7.4 | Install and connect up battery charger | Hrs | 1 | Not Applicable | R 545.15 |
| 7.5 | Install terminating devices | Hrs | 1 | Not Applicable | R 294.01 |
| 7.6 | Install & Connect up Battery bank | Hrs | 1 | Not Applicable | R 294.01 |
| 7.7 | Install safety signs | Hrs | 1 | Not Applicable | R 208.26 |
| 7.8 | Install safety equipment rack | Hrs | 1 | Not Applicable | R 294.01 |
| 7.9 | Installation of VT JB | Ea | 1 | Not Applicable | R 1,255.68 |
| 7.10' | Installation of AC Distribution Board | Ea | 1 | Not Applicable | R 2,278.60 |
| 7.11 | Installation of RTU | Ea | 1 | Not Applicable | R 2,278.60 |
| 7.12 | Installation of Meter Module | Ea | 1 | Not Applicable | R 1,604.82 |
| 7.13 | Install telecontrol cable (RS485) | Ea | 1 | Not Applicable | R 6.06 |
| 7.14 | Install TPH10AX | Ea | 1 | Not Applicable | R 5.20 |
| 7.15 | Install TPH25AX | Ea | 1 | Not Applicable | R 6.06 |
| 7.16 | Install TPH50AX | Ea | 1 | Not Applicable | R 6.06 |
| 7.17 | Install BVX04ECV | Ea | 1 | Not Applicable | R 5.84 |
| 7.18 | Install BVX04HCV | Ea | 1 | Not Applicable | R 5.84 |
| 7.19 | Install BVX04KCV | M | 1 | Not Applicable | R 5.84 |
| 7.2 | Install BVX12DCV | M | 1 | Not Applicable | R 6.94 |
| 7.21 | Install BVX19DCV | M | 1 | Not Applicable | R 8.05 |
| 7.22 | Terminate & Ferule BVX04ECV | Ea | 1 | Not Applicable | R 172.43 |
| 7.23 | Terminate & Ferule BVX04HCV | Ea | 1 | Not Applicable | R 194.20 |
| 7.24 | Terminate & Ferule BVX04KCV | Ea | 1 | Not Applicable | R 245.02 |
| 7.24 | Terminate & Ferule BVX12DCV | Ea | 1 | Not Applicable | R 290.40 |
| 7.25 | Terminate & Ferule BVX19DCV | Ea | 1 | Not Applicable | R 263.18 |
| 7.26 | Terminate & Ferule telecontrol cable (RS485) | Ea | 1 | Not Applicable | R 366.63 |
| 7.27 | Terminate & Ferule TPH10AX | Ea | 1 | Not Applicable | R 400.59 |
| 7.28 | Terminate & Ferule TPH25AX | Ea | 1 | Not Applicable | R 366.63 |
| 7.29 | Terminate & Ferule TPH50AX | Ea | 1 | Not Applicable | R 400.59 |
| 7.3 | Disconnection and Removal of Redundant Cables | M | 1 | Not Applicable | R 4.97 |
| 7.31 | Excavation ,Open & Close Trenches | M | 1 | Not Applicable | R 98.01 |
| 7.32 | Cable racks | M | 1 | Not Applicable | R 137.95 |
| 7.33 | Brackets | Ea | 1 | Not Applicable | R 98.00 |

| 7.34 | Trays | Ea | 1 | Not Applicable | R | 135.30 |
|------------------------------------|---|------|-----|----------------|---|----------|
| 7.35 | Cable Labels | Ea | 1 | Not Applicable | R | 27.25 |
| 7.36 | Panel/JB Labels | Ea | 1 | Not Applicable | R | 27.25 |
| 7.37 | Installation of CT& OTHER JB's | Ea | 1 | Not Applicable | R | 1,255.68 |
| 7.38 | Removal of JB's | Ea | 1 | Not Applicable | R | 1,255.68 |
| 7.39 | Removal of cables | M | 1 | Not Applicable | R | 4.95 |
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| Subtotal carried to Summary | | | | R | | |
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| | | | | | | |
| Item No. | Description of the item | Unit | Qty | Rate | | |
| | | | | Suppl | | |
| 8 | COMMISSIONING | | | | | |
| 8.1 | XTMXXXX TRANSFORMER PROTECTION SCHEME | | | | | |
| | LABOUR COSTS | | | | | |
| 8.1.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 412.99 |
| 8.1.2 | Check if HV Yard and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.1.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 422.28 |
| 8.1.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 440.83 |
| 8.1.5 | Test & check CT's and VT's | Hrs | 1 | Not Applicable | R | 440.83 |
| 8.1.6 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 440.83 |
| 8.1.7 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.8 | Overall functional testing | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.9 | Polarities | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.10 | Primary Injections | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.11 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.12 | Commissioning report | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.13 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 500.79 |
| 8.1.14 | Specialised Transformer Tests | | | | | |
| 8.1.15 | Tan Delta - CT's | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.16 | Tan Delta - VT's | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.17 | Tan Delta - HV/LV Windings | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.17 | Tan Delta - HV/LV Bushings | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.18 | Diverter Continuity | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.19 | Transformer Turns Ratio (TTR) | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.20 | Megger/Insulation Tests on Transfromer | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.21 | Open Circuit/Magnetising | Ea | 1 | Not Applicable | R | 506.06 |
| 8.1.22 | USE OF TEST EQUIPMENT | | | | | |
| 8.1.23 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 152.82 |
| 8.1.24 | Transformer Test Equipment | Hrs | 1 | Not Applicable | R | 21.16 |
| 8.1.25 | CT Test Equipment | Hrs | 1 | Not Applicable | R | 21.16 |
| 8.1.26 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 293.88 |
| 8.1.27 | Primary Injection set | Hrs | 1 | Not Applicable | R | 235.11 |
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| 8.2 | XFZDXXXX HV FEEDER PROTECTION SCHEME | | | | | |
| 8.2 | LABOUR COSTS | | | | | |
| 8.2.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.2 | Check if HV Yard and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.5 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.6 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.7 | Overall functional testing | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.8 | Polarities | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.9 | Primary Injections | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.2.10 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 511.33 |

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|---|--|-----|---|----------------|---|--------|
| 8.2.11 | Commissioning report | Hrs | 1 | Not Applicable | R | 511.33 |
| 8.2.12 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 511.33 |
| 8.2.13 | USE OF TEST EQUIPMENT | | | | | |
| 8.2.14 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 159.25 |
| 8.2.15 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 306.26 |
| 8.2.16 | Primary Injection set | Hrs | 1 | Not Applicable | R | 245.01 |
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| 8.3 | XBZXXXX BUSBAR/BUSZONE PROTECTION SCHEME | | | | | |
| 8.3 | LABOUR COSTS | | | | | |
| 8.3.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.2 | Check if HV Yard and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.5 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.6 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.7 | Overall functional testing | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.8 | Polarities | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.9 | Primary Injections | Hrs | 1 | Not Applicable | R | 443.43 |
| 8.3.10 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 503.74 |
| 8.3.11 | Commissioning report | Hrs | 1 | Not Applicable | R | 503.74 |
| 8.3.12 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 503.74 |
| 8.3.13 | USE OF TEST EQUIPMENT | | | | | |
| 8.3.14 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 153.73 |
| 8.3.15 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 295.62 |
| 8.3.16 | Primary Injection set | Hrs | 1 | Not Applicable | R | 236.49 |
| 8.4 | XRFXXXX MV FEEDER PROTECTION SCHEME | | | | | |
| 8.4 | LABOUR COSTS | | | | | |
| 8.4.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.2 | Check if HV Yard and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.5 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.6 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.7 | Overall functional testing | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.8 | Polarities | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.9 | Primary Injections | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.4.10 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.4.11 | Commissioning report | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.4.12 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.4.13 | USE OF TEST EQUIPMENT | | | | | |
| 8.4.14 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 159.25 |
| 8.4.15 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 306.26 |
| 8.4.16 | Primary Injection set | Hrs | 1 | Not Applicable | R | 245.01 |

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| 8.5 | Other Schemes e.g Bus Coupler/Capacitor etc (where Applicable) | | | | | |
| 8.5 | LABOUR COSTS | | | | | |
| 8.5.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.2 | Check if HV Yard and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.5 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.6 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.7 | Overall functional testing | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.8 | Polarities | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.9 | Primary Injections | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.5.10 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 506.06 |
| 8.5.11 | Commissioning report | Hrs | 1 | Not Applicable | R | 506.06 |
| 8.5.12 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 506.06 |
| | USE OF TEST EQUIPMENT | | | | | |
| 8.5.13 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 159.25 |
| 8.5.14 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 306.26 |
| 8.5.15 | Primary Injection set | Hrs | 1 | Not Applicable | R | 245.01 |
| | | | | | | |
| 8.6 | MV Busbar Arc protection schemes | | | | | |
| 8.6 | LABOUR COSTS | | | | | |
| 8.6.1 | Work Preparation | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.2 | Check if MV Switchgear and Panel equipment are as specified | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.3 | Ring Out and Check All Equipment | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.4 | Check control cabling | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.5 | DC tests for all indications and alarms | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.6 | Relay, scheme & equipment testing | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.7 | Overall functional testing | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.6.8 | Polarities | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.6.9 | Primary Injections | Hrs | 1 | Not Applicable | R | 445.47 |
| 8.6.10 | Mark-up Drawings as built | Hrs | 1 | Not Applicable | R | 506.06 |
| 8.6.11 | Commissioning report | Hrs | 1 | Not Applicable | R | 506.06 |
| 8.6.12 | Commissioning with primary voltage & current | Hrs | 1 | Not Applicable | R | 506.06 |
| 8.6.13 | USE OF TEST EQUIPMENT | | | | | |
| 8.6.14 | 5kV Insulation Tester | Hrs | 1 | Not Applicable | R | 159.25 |
| 8.6.15 | Secondary Injection Set - 6 Phase | Hrs | 1 | Not Applicable | R | 306.26 |
| 8.6.16 | Primary Injection set | Hrs | 1 | Not Applicable | R | 245.01 |
| | | | | | | |
| 8.7 | DC Commissioning Costs | | | | | |
| 8.7 | BATTERY (Nicad), BATTERY CHARGERS AND AC/DC BOARD INSTALLATION & COMMISSIONING | | | | | |
| 8.7 | LABOUR COSTS | | | | | |
| 8.7.1 | Work Preparation Time | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.2 | AC / DC Board | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.3 | Installation | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.6 | Back Up Charger | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.7 | Battery commissioning | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.8 | Charger commissioning | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.9 | Drawings | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.10 | Report. | Hrs | 1 | Not Applicable | R | 450.11 |
| 8.7.11 | Decommissioning | Hrs | 1 | Not Applicable | R | 464.04 |
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| | | | | | | |
|--------|--|-----|---|----------------|---|--------|
| 8.8 | SCASS COMMISSIONING COSTS | | | | | |
| 8.8 | INSTALLATION & COMMISSIONING D20 RTU / I-BOX | | | | | |
| 8.8 | LABOUR COSTS | Hrs | | | | |
| 8.8.1 | Work Preparation Time | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.8.2 | Installation of antenna and coaxial cable | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.8.3 | Glanding and lugging | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.8.4 | Installation of radio / modem | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.8.5 | Termination of cables | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.8.6 | Installation and cabling of door alarm | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.7 | Jumpering of alarms on the IDF | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.8 | Testing of flyleads | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.9 | Creating of database | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.10 | Pre-commissioning of D20 RTU | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.11 | Testing of comms with SMART | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.12 | Commissioning of D20 RTU | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.13 | Commissioning of controls/alarms (1 feeder/NB) | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.14 | Commissioning of controls/alarms (1 transformer) | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.15 | Decommissioning of RTU (MRTU/Intrac) | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.16 | Aligning radio and supplying test sheets | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.17 | Records updating (CD and hard copy) | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.8.18 | Filling (signed hand-over certificate, records, test sheets, commissioning sheets, list of defects, e.g. faulty batteries, etc.) | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9 | METERING & MEASUREMENTS COMMISSIONING COSTS | | | | | |
| 8.9 | LABOUR COSTS | | | | | |
| 8.9.1 | Work Preparation Time | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.9.2 | Check if yard and panel equipment are as specified. | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.9.3 | Ring out and check all equipment. | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.9.4 | Check cabling. | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.9.5 | Test and check CT's and VT's. | Hrs | 1 | Not Applicable | R | 459.40 |
| 8.9.6 | Modem and antenna. | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.7 | MV 90 commissioning | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.8 | Meters | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.9 | Drawings | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.10 | Report | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.11 | Commissioning with primary voltage and current. | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.12 | Decommissioning | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.13 | Additional wiring | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.14 | Insulation test all cables | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.15 | Primary injections - test and check VT's and CT's | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.16 | Configure and calibration of meters and transducers | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.17 | Installation of meters and transducers | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.18 | Secondary injections | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.19 | Drawings. | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.20 | Report. | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.21 | Commissioning with primary voltage and current. | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.22 | Decommissioning | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.23 | Test equipment - Insulation Tester | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.24 | Test Equipment - Secondary Injection Set | Hrs | 1 | Not Applicable | R | 521.87 |
| 8.9.25 | Test Equipment - Primary Injection Set | Hrs | 1 | Not Applicable | R | 521.87 |

| 8.10 | GENERAL AND CONTINGENCY | | | | |
|------------------------------------|--|------|-----|----------------|----------|
| | MATERIAL & LABOUR COSTS | | | | |
| 8.11 | Foam to fill control room holes | m2 | 1 | 823.58 | R 267.15 |
| Subtotal carried to Summary | | | | R | |
| | | | | | |
| Item No. | Description of the item | Unit | Qty | Rate | |
| | | | | Suppl | Inst |
| 9 | TRANSPORT | | | | |
| 9.1 | Transport of New Equipment | km | 1 | Not Applicable | R 19.85 |
| 9.2 | Removal of all redudant secondary material | km | 1 | Not Applicable | R 19.85 |
| 9.3 | Contingency travel - as agreed with designer or PC (LDV) | km | 1 | Not Applicable | R 6.87 |
| Subtotal carried to Summary | | | | R | |

| Item No. | Refer | Description of the item | Unit | Qty | Proposed Rate |
|-----------------------------|-------|---|------|-----|---------------|
| 10.1 | | Cable labels (Aluminium numbers) | ea | 1 | R54.91 |
| 11.1 | | Panel labels | ea | 1 | R274.53 |
| 12.1 | | Tbrackets | ea | 1 | R137.26 |
| 13.1 | | WM50 50mm x 3m W/MESH 50/50 HEX GALV | ea | 1 | R702.79 |
| 14.1 | | WM50 100mm x 3m W/MESH 50/50 HEX GALV | ea | 1 | R713.77 |
| 15.1 | | M8 Hold down clamp solid 2mm PG | ea | 1 | R14.28 |
| 16.1 | | Wire mesh splice clamp set | ea | 1 | R18.12 |
| 17.1 | | CS 1 M12 SPRING NUT LONG GALV | ea | 1 | R15.37 |
| 18.1 | | M12 X30 HEX Set Screws Galv | ea | 1 | R9.94 |
| 19.1 | | CS1000 5M Channel Pre Galv | ea | 1 | R1,735.01 |
| 20.1 | | CS254 STAGG 650MM C/LEVER ARM HDG | ea | 1 | R603.96 |
| 21.1 | | WM75 600MM H/DUTY W/MESH HOR BEND | ea | 1 | R2,745.27 |
| 22.1 | | M10X75MM RAWL BOLTS | ea | 1 | R26.35 |
| 23.1 | | M8X40 HEX SET SCREWS GALV | ea | 1 | R4.78 |
| 24.1 | | CS76 800MM X 3M LADDERRACK HDG | ea | 1 | R4,063.00 |
| 25.1 | | CL76 L/RACK SPLICE SET HDG | ea | 1 | R175.70 |
| 26.1 | | WM75 600MM X 3M W/MESH 100/50 HEX GALV | ea | 1 | R2,745.27 |
| 27.1 | | GS75 600MM H/DUTY HOR BEND 100/50 HXG | ea | 1 | R2,745.27 |
| 28.1 | | CS 1 M10 SPRING NUT LONG GALV | ea | 1 | R15.37 |
| 29.1 | | CS254 STAGG 650MM C/LEVER ARM HDG | ea | 1 | R603.96 |
| 30.1 | | Marker Helagrip 2.0 - 5.0mm Yellow Marker Kit A - Z (500 units of each letter) | ea | 1 | R1,870.10 |
| 31.1 | | Marker Helagrip 2.0 - 5.0mm Yellow Marker Kit 0 - 9 (500 units of each number) | ea | 1 | R719.47 |
| 32.1 | | Terminal Preinsulated Yellow Lip Blade 4.6w | pkt | 1 | R540.84 |
| 33.1 | | Terminal Preinsulated Blue Lip Blade 4.6 | pkt | 1 | R330.11 |
| 34.1 | | Terminal Preinsulated Yellow Ring 6.0mm | pkt | 1 | R597.14 |
| 35.1 | | Terminal Preinsulated Blue Ring 6.0mm | pkt | 1 | R379.10 |
| 36.1 | | Control Plant labels (smaller) | | | |
| 37.1 | | 185x93mm | ea | 1 | R301.98 |
| 38.1 | | 197x93mm | ea | 1 | R301.98 |
| 39.1 | | 80x93mm | ea | 1 | R301.98 |
| 40.1 | | 67x12mm | ea | 1 | R71.38 |
| 41.1 | | 119x93mm | ea | 1 | R301.98 |
| 42.1 | | 350x36mm | ea | 1 | R274.53 |
| 43.1 | | 50x12mm | ea | 1 | R60.40 |
| 44.1 | | 155x93mm | ea | 1 | R301.98 |
| 44.2 | | GP Wire 16mm | m | 1 | R42.20 |
| 44.3 | | Other (as per invoice amount) | Item | 1 | R0.00 |
| Subtotal carried to Summary | | | | | |

Company Name : _____

Representative : _____

Signature : _____

Rates accepted : YES
(tick yes or no)

NO