

DE AAR WEST TRANSFORMER REPLACEMENT					
Bill 1	Preliminary & General Items	Unit	Qty	Rate	Total
1.1	<u>FIXED TERMS</u>				
1.1.1	<u>Site Camp, Stores and Offices</u>				
	Facilities for the Contractor Total cost of a construction camp complete with secure storage facilities, site office with toilet and hand wash basin, air conditioner, table and chairs and administrative offices. Office should allow for meeting space.				
a)	Supply	Sum	1	.....	.....
b)	Removal on completion of contract	Sum	1	.....	.....
1.1.2	<u>Construction Machinery & Equipment</u>				
	Total cost of all construction machinery required during the project.				
a)	Supply to site.	Sum	1	.....	.....
b)	Removal on completion of contract.	Sum	1	.....	.....
1.1.3	<u>Name Board</u>				
a)	Supply & installation of name board as per detail dwg.	No	1	.....	.....
b)	Removal of name boards at final hand over.	No	1	.....	.....
1.1.4	<u>Clearing of Site</u>				
a)	Allow for clearing of site on completion of the Works.	Sum	1	.....	.....
1.1.5	<u>Occupational Health and Safety</u>				
a)	Allow for Health & Safety Management Plan as per the Employer's specifications.	Sum	1	.....	.....
b)	Other H&S requirements	Sum	1	.....	.....
1.1.6	<u>Performance Guarantee</u>				
a)	Allow for the fixed costs of the performance guarantee in accordance with the Conditions of Contract.	Sum	1	.....	.....
1.1.7	<u>Allowance for Tracing of Existing Cables</u>				
a)	This sum will only be approved for spending by the engineer on proof of invoices paid, plus attendance fee.	Sum	1	R 15 000.00	R 15 000.00
b)	Attendance fee on PC amount.	%	.....	.....	.....
1.1.8	<u>Allowance for Damage and Repairs to Existing Services</u>				
a)	This sum will only be approved for spending by the engineer on proof of accidental damage.	Sum	1	R 25 000.00	R 25 000.00
1.1.9	<u>Climatic Conditions</u>				
a)	Allow for expenses which might occur due to rain or other climatic conditions. (Tenderers to consult the Weather Bureau on average climatic conditions at the site.)	Sum	1	.....	.....
Amount to be carried to the next page					.....

DE AAR WEST TRANSFORMER REPLACEMENT					
Bill 1	Preliminary & General Items	Unit	Qty	Rate	Total Amount
	Subtotal carried over				
1.2	TIME RELATED ITEMS (Tenderer to fill in contract period in months under Qty) Note: Complete as applicable and mark zero those not applicable				
1.2.1	Site Camp, Stores, Accommodation & Senior Personnel				
a)	Cost for the site camp & offices during contract period.	Months	.....	.....	.....
b)	Accommodation of staff during contract period.	Months	.....	.....	.....
c)	Costs for contract manager during contract period.	Months	.....	.....	.....
d)	Costs for contract foreman during contract period.	Months	.....	.....	.....
e)	Costs for contract administration personnel during contract period.	Months	.....	.....	.....
1.2.2	Construction Machinery & Equipment				
a)	Total cost of construction machinery and maintenance of all construction machinery required during the project.	Months	.....	.....	.....
1.2.3	Co-operation & Liaison				
a)	Allow for co-operation & liaison with client, other contractors and engineer.	Months	.....	.....	.....
1.2.4	Security				
a)	Total cost for storing, guarding and protection of all material & equipment during the contract period.	Months	.....	.....	.....
1.2.5	Insurance of the Works				
a)	Total cost of Insurance of the Works in accordance with the Conditions of Contract.	Months	.....	.....	.....
1.2.6	Performance Guarantee				
a)	Allow for the time related costs of the performance guarantee in accordance with the Conditions of Contract.	Months	.....	.....	.....
1.2.7	Health & Safety				
a)	Allow for all Health & Safety requirements as per the Management Plan and Employer's requirements.	Months	.....	.....	.....
b)	Health & Safety Personnel.	Months	.....	.....	.....
1.2.8	Program				
a)	Allow for weekly updating of program & progress as per the employer's format.	Weeks	.....	.....	.....
1.2.9	Extension of time costs In the event of extension of time granted with cost, the total cost for time related items claimed will be :				
a)	Per calendar day	Day	1	.....	Rate Only
b)	Per Week	Week	1	.....	Rate Only
c)	Per Month	Month	1	.....	Rate Only
Total Bill 1 - P&Gs carried forward to Summary					.....

DE AAR WEST TRANSFORMER REPLACEMENT						
Bill 2	New Equipment	Unit	Qty	Supply Rate	Install Rate	Total
2.1	<u>New Power Transformer - ONAN Cooling</u>					
a)	10 MVA 22 kV / 6.6 kV Power Transformer complying fully with the specifications Rate to Include: -Complete 10 MVA Transformer with auto-tapchanger -Conservator and breather -Oil for both transformer and auto-tapchanger -All protection and sensing equipment mounted in and onto the transformer as needed -Complete marshalling kiosk with all cabling from equipment -Factory Acceptance Testing -Packaging for transport of all equipment -Preparation of a detailed O&M manual -Spanners & Special Tools -Spares for two year period	No	2	.....	.....	.....
b)	Allowance for municipal employees to be present during the FAT as per requirements in documents	No.	2	.....	.....	.....
2.2	<u>New Power Transformer - ONAF Cooling</u>					
a)	10 MVA 22 kV / 6.6 kV Power Transformer complying fully with the Scope Document and item 1.1.a above, with Forced Air cooling to allow for 25% overloading. Rate to Include: -Appropriate Cbi/Schneider/ABB breaker in DB of substation including all labelling -Power cabling to yard equipment in existing underground ducts and termination for fans, control system to control fans -Monitoring and control system to control cooling fans	No	1	.....	.....	Rate Only
2.3	<u>Transportation & Installation of Transformer</u> Rates below to allow for any temporary site works, dismantling, demolition, damage prevention measures, repairs and making good. Installation of the two new transformers (and removal of the old transformers) cannot be done simultaneously as one transformer needs to supply electricity to De Aar West during the project.					
a)	Transportation of the complete transformer and associated equipment to the site in De Aar, offloading, placement, assembly and installation of the new transformer Rate to include: -ALL associated loading at the factory, arrangements, insurances, traffic escorts, P&Gs, permits, etc. to complete the delivery -Modification (if needed) and connection with 22 kV busbars and 6.6 kV busbars -Connection of the transformer tank and neutral point (secondary side) with substation earth mat	Sum	2	.....	.....	.....
b)	AC supply to the Tap Changer Rate to include: -Appropriate Cbi/Schneider/ABB breaker in DB of substation including all labelling -Cabling to yard equipment in existing underground ducts and termination. -New Certificate of Compliance (CoC) covered elsewhere	Sum	2	.....	.....	.....
Amount to be carried to the next page						.....

DE AAR WEST TRANSFORMER REPLACEMENT						
Bill 2	New Equipment	Unit	Qty	Supply Rate	Install Rate	Total
	Subtotal carried over					.....
2.4	<u>Control Panels & Associated Equipment</u>					
a)	New Control Panel within substation building Control panel should contain all relays, alarms, indication and switching equipment needed for each 22kV supply (Tap changer, breaker, protection, etc.) Rate to include the following: -Shifting of the two existing BTUs to accommodate the new control panel -Power Supply from the appropriate supply points (such as BTU) -Control and power cables to the 6.6 kV panels (includes integration for trips and alarms) -All wire management and cable support needed	Sum	2	.....	.....	.....
b)	All cabling from the transformer (including tap changer) marshalling kiosk and breaker, CTs & VT marshalling kiosk to the control panel in underground ducts on site	Sum	2	.....	.....	.....
c)	Set of new CTs installed in existing 6.6 kV incomer panels to ensure differential protection functions correctly Rate to include all wiring to relays and integration	Sum	2	.....	.....	.....
d)	New Metering Panel for 22 kV supply Panel to include -Elster A1700 meter -Summation CTs -CT Labs' VECTO III Power Quality Meter -CT Labs' VECTO III 3 Year Subscription	No	1	.....	.....	.....
e)	New Battery Trip Unit for New Control Panels Rate to include supply cabling and necessary modifications in existing DB	No.	1	.....	.....	.....
2.5	<u>Any other items deemed necessary</u>					
a)	.....				
b)	.....				
c)	.....				
d)	.....				
e)	.....				
2.6	<u>New 22 kV Equipment</u> The tenderer shall provide rates on modern equipment to replace existing equipment of a similar or better rating, with all associated support structures, earthing connections and if needed plinth modifications, to provide the required functionality					
a)	Outdoor 22 kV 15VA 300/5 CTs Rate to include complete new cabling from new equipment in yard to marshalling kiosk and earthing connection to earth mat	No.	6	.....	.....	.....
b)	Outdoor 22 kV/110V 200VA VT Rate to include complete new cabling from new equipment in yard to marshalling kiosk and earthing connection to earth mat	No.	2
Amount to be carried to the next page					

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Bill 2	New Equipment	Unit	Qty	Supply Rate	Install Rate	Total
	Subtotal carried over				
c)	Outdoor 22kV 300A Vacuum Circuit Breakers Rate to include: Rate to include complete new cabling from new equipment in yard to marshalling kiosk and earthing connection to earth mat	No.	6	.....	.....	.....
d)	New outdoor marshalling kiosk and metal support structure to accommodate all necessary equipment and terminals for the 3x CTs, VT and circuit breaker of each transformer's 22 kV supply Rate to include: -Bonding to earthmat and any other cabling not already allowed for	No.	2	.....	.....	.....
2.7	<u>Commissioning</u>					
a)	Complete testing and commissioning of the new transformer, tap changer, circuit breaker, CTs, VT and associated equipment and functions on site when all systems have been installed Rate to include, but not limited to: -Testing of the transformer -Testing of the tap changer and control panel -Testing and calibration of all protection systems related to the new transformer and tapchanger -Testing and calibration of all protection systems related to the new transformer and tapchanger that integrates with the 6.6 kV system such as directional overcurrent and earth fault, master trips, etc.	Sum	2	.....	.....	.....
b)	Training for Municipal Employees (4 Employees)	Sum	1	.....	.....	.....
c)	Complete Datafile	Sum	1	.....	.....	.....
d)	Allow for the testing and issue of an electrical Certificate of Compliance (CoC) for the entire low voltage installation in accordance with the latest SANS 10142 Part 1.	Sum	1	.....	.....	.....
Total Bill 2 - New Equipment carried forward to Summary						.....

DE AAR WEST TRANSFORMER REPLACEMENT						
Bill 3	Servicing of Existing Equipment	Unit	Qty	Supply Rate	Install Rate	Total
3.1	<u>Servicing of 6.6 kV Switchgear</u>					
a)	Complete servicing and testing of 6.6 kV indoor oil switchgear Rate to include: -Complete Service including new oil -Gap, speed and duct testing -Secondary Current Injection Testing and relay calibration certificates	No.	15	.....	.....	.....
3.2	<u>Battery Trip Units</u>					
a)	Replace all 24x 1.5V battery cells in BTUs with new Rate to include testing of the BTU	Sum	1	.....	.....	.....
3.3	<u>Servicing of 22kV "Dog Boxes"</u>					
a)	Complete service and testing of the 22 kV Dog Box Rate to Include: -Provide list of all remedial work to be done on each unit with quotation -Gap, speed and duct testing -Secondary Current Injection Testing and relay calibration certificates	No.	2	.....	.....	.....
Total Bill 3 - Servicing of Existing Equipment carried forward to Summary						.....

DE AAR WEST TRANSFORMER REPLACEMENT						
Bill 4	Old Transformer	Unit	Qty	Supply Rate	Install Rate	Total
4.1	<u>Removal Old Transformers</u> It should be noted that the project will be done in phases to allow one transformer to supply electricity to De Aar West. The contractor will therefore have to take into consideration the planning when transformers can be removed.					
a)	Disconnection all cabling, earthing, etc. still connected to the old transformer, tap changer, etc. <i>Rate to include removal of all old cabling and wiring that will not be re-used</i>	Sum	2	.....	.....	.....
b)	Removal of the existing transformer from its plinth, load onto transport vehicle and remove from site <i>Rate to include crane hire and any temporary site works to accommodate the removal, oil handling, etc.</i>	Sum	2	.....	.....	.....
4.2	<u>Compensation for Old Transformers</u>					
a)	Compensation paid by the contractor to the municipality for the old transformer removed from site	No	2	.....	.....	.....
Total Bill 4 - Old Transformer carried forward to Summary						.....

DE AAR WEST TRANSFORMER REPLACEMENT SUMMARY OF PRICES	
DESCRIPTION	AMOUNT
BILL 1 - PRELIMINARY & GENERAL ITEMS
BILL 2 - NEW EQUIPMENT
BILL 3 - SERVICING OF EXISTING EQUIPMENT
BILL 4 - OLD TRANSFORMER
SUBTOTAL
CONTINGENCIES (15%)
SUBTOTAL
PLUS 15% VAT
TOTAL