

Altron Analysts Visit – 28 Feb 2011

Powertech

Transformers



PTT Executive Committee



Leon Viljoen
CEO



Alastair Hill
Financial Director



Leon Harmsen
Group HC Manager



Bernard Meyer
COO Power Transformers



Basset Engle
GM Distribution Transformers Cape Town

Leon Schultz
Group Marketing Manager



Mark Scott
Group IT/IS Manager



Dr Jacko Koen
Group Technology Manager



Shane Smith
Group Supply Chain Manager



Maggie Digabane
GM Distribution Transformers Booysens



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Introduction



Powertech Transformers (PTT) comprise three factories namely:

- Power Transformers in Pretoria West,
- Distribution Transformers in Booyens and
- Distribution Transformers in Cape Town.

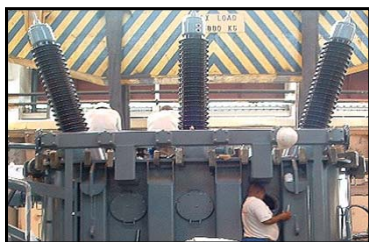
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Products & Services



In our Pretoria West Factory, local manufacturing of:

- **Power Transformers**
Up to 800 MVA (500 kV)
- **Shunt Reactors**
Up to 500 kV



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Products & Services Continued



Also offered

- Installation, commissioning and site service
- Laboratory and equipment calibration services



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Products & Services Continued



In our Johannesburg Factory,
local manufacturing of:

- **Distribution Transformers**
100kVA to 20MVA
(Max 132kV)
- **Neutral Earthing Resistors**
Up to 36kV



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Products & Services Continued



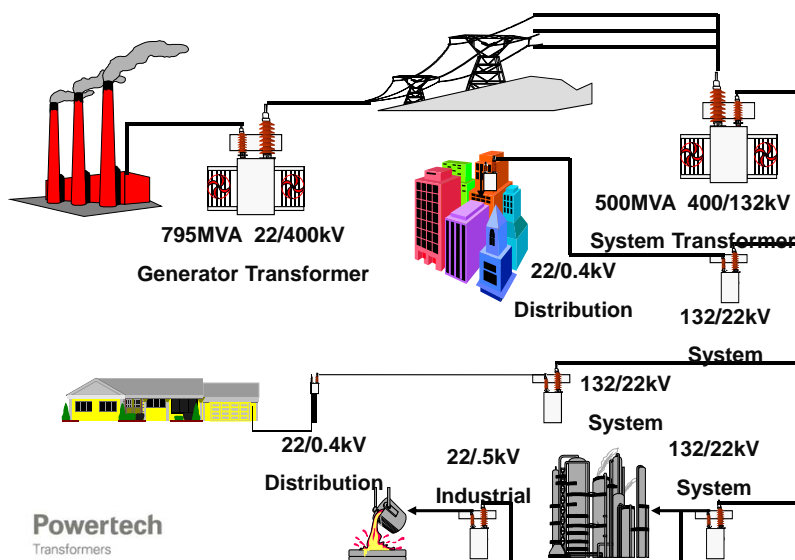
In our Cape Town Factory, local manufacturing of:

- **Distribution Transformers**
16kVA to 20MVA
(Limited to 1.6MVA 36kV)
- **Miniature Substations**
100kVA up to 1600kVA
Up to 22kV



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Electricity Network



Transformer in a Network



If the generator is the dam, the conductor a river and the valves the switchgear, then a transformer can be compared to a rapid in the river; Wide and shallow on the one side (High Voltage Side) and deep and narrow on the other (Low Voltage Side) but increased water velocity and turbulence in between.



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Forces during a Network Fault Condition



The forces that could be exerted on a winding during a network fault condition can be compared to stacking 50 motor vehicles on top of a winding. (Axial forces of 500kN).



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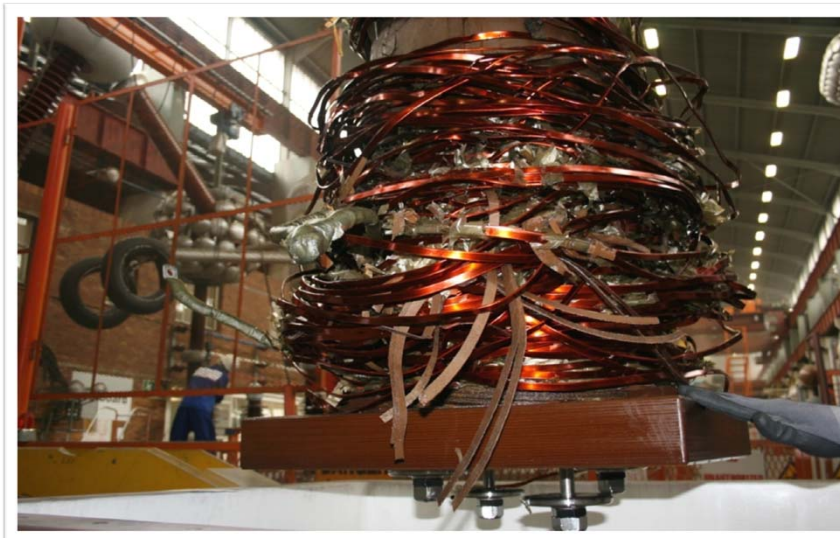
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Short Circuit Test of a Reactor



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End Result of a Successful Test



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Volume of Oil in a Transformer



A LPT contains a volume of oil equal to the volume of diesel required to travel 60 times from Cape to Cairo and back in a 4x4! (120 000 litres).



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Copper Quantity in a Transformer



PTT manufactures LPTs each containing enough copper to wire 1 500 houses. (80 tons)



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Majuba GSU Transformer Core



The core mass of this transformer is equal to that of a Jumbo Jet!



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Lightning Impulse Testing



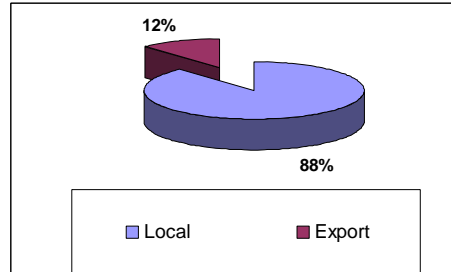
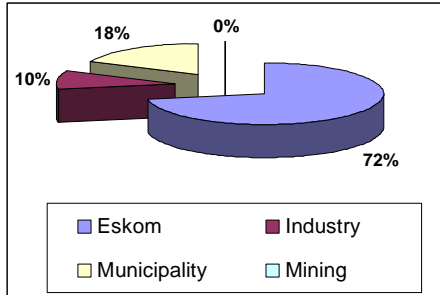
Every transformer is struck 8 times with lightning of several hundred thousands of volts in a High Voltage Test Hall.



To calculate the response of the winding to this impulse can be compared to a tub of water being rocked from side to side and then calculating where the water “peak and valleys” are to design the tub such that no spilling of the water occurs!

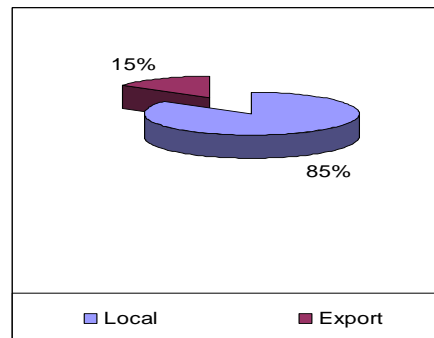
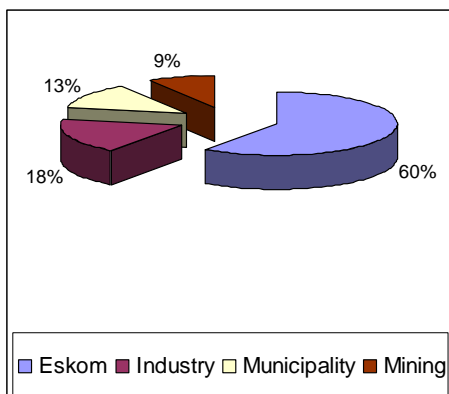
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Nature of the Market Place – Power Transformers



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Nature of the Market Place – Distribution Transformers



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Training Facilities



Windings

EDIT



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Key Opportunities & Threats



Opportunities

- Infrastructure expansion/upgrade in SA.
- Export to Southern Africa.
- Export to Angola, Zimbabwe and DRC once political situation has stabilised.

Threats

- Financial constraints of customers
- Technical constraints of customers
- Imports from India, Korea and China

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Capex (Over the next 3 years)



Power

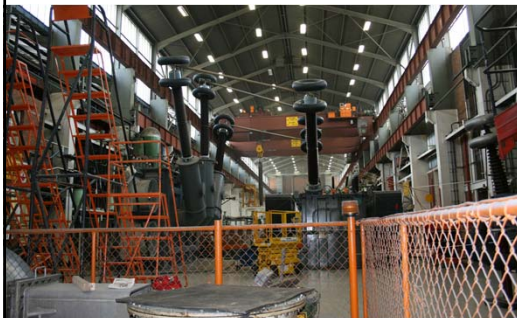
- New SPT Facility R80 million
- Upgrade of Test Facility R80 million

Distribution

- Upgrade of Test Board R30 million
- New Core Cutting Facility R12 million

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Current Situation – Testbay



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New Test Facility



Historic sales with operating margin range



Power

- Feb 2010 R1 260M OM 6 to 10%
- Feb 2009 R1 017M OM 6 to 10%
- Feb 2008 R630M OM 6 to 10%
- Feb 2007 R486M OM 10 to 12%
- Feb 2006 R422M OM 10 to 15%

Distribution

- Feb 2010 R520M OM 4 to 8%
- Feb 2009 R720M OM 10 to 15%
- Feb 2008 R665M OM 10 to 15%
- Feb 2007 R554M OM 10 to 15%
- Feb 2006 R375M OM 10 to 15%

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Strategic Alliance Partners




- ABB - Technology Agreement
- Tianwei Wire – CTC & Enameled Cu Conductor
- JFE formely Kawasaki – Core Steel
- Weidmann Technologies – Design Capability
- BEE Partner – Power Matla

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B3E2 Status





EMPOWERDEX
Economic Empowerment Rating Agency

Generic Scorecard Verification
Powertech Transformers (Pty) Ltd

Registration Number: 1721-000234-CT
Address: 1 Edinburg Street, Fletcherville, Durban

Level Three Contributor			
Indicator/Category	2023 Score	2022 Score	Weight
Business Viability	14.04	14.04	10.00%
Capital	15.00	15.00	10.00%
Operational Efficiency	15.00	15.00	10.00%
Human Development	15.00	15.00	10.00%
Customer Satisfaction	15.00	15.00	10.00%
Environmental Stewardship	15.00	15.00	10.00%
Leadership Development	15.00	15.00	10.00%

For EMPOWERDEX (Pty) Ltd

Issue Date: 2024/11/20

Sanas
SASOLAS
BEE1000

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Certificate



**Thank you for
your time**