



69TH AMEU CONVENTION

1 – 4 October 2023

CSIR International Convention Centre

Confronting South Africa's Electricity Crisis in the context of a 'Balanced Just Energy Transition' (BJET) and the need for a reliable and resilient national electricity grid

IPP RE Driven Transmission Expansion

Presented by Pat Naidoo

Secretariat – Industry Advisory Board

Faculty of Engineering and the Built Environment

University of Johannesburg

2 Oct 2023: Panel Session at 12:30

First Prize

Invest in RE where existing Tx capacity exists
all of Africa is a RE generator, make hay whilst the sun shines

Post BW5 Available Capacities (TDP)

REGION	AVAILABLE CAPACITY (MW)
MPUMALANGA	6788
GAUTENG	6021
KWAZULU NATAL	5500
LIMPOPO	1313
EASTERN CAPE	1236
HYDRA / KAROO	1185
	22 043 (20 GW)
FREE STATE	660
WESTERN CAPE	35
NORTHERN CAPE	0

+ 14000 km – 10 years – R210b

14218 km of lines

9021 km 765kV
7698 km 400 kV

170 Transformers

160 GVA

+ Transmission

Don't forget to add Pumped Storage to Manage Intermittent Renewables, Possibly extend to Utility Scale Batteries and Power Electronics as in HVDC

+ Tubatse 1500 MW and More
+ R50 billion plus

R210 b moves towards + R 300b

Time to Reflect

South African National Grid

Tx Lines = 33 193km

765 kV – 2784 km

400 kV – 19 916 km

22 700 km

(Eskom Integrated Report 2023)

National Grid

Primarily built over 3 decades
1970's, 1980's, 1990's

Eskom Balance Sheet Financed
(Eskom Treasury & Markets)

@ 2023

Total Assets : R 802b
(R670b – Plant & Equipment)

Total Liabilities: R 567b

Revenue = R247b

IPP RE Driven Investment

Treble the existing 765 kV system

Add another half to the existing 400 kV system

Add a new pumped storage Tubatse 1500 MW

Want to build another ½ Eskom Assets

(Plant & Equipment)

R 210/300b vs R 670b

Present Day – Not Possible

Stretched Balance Sheets

(Company and Country)

Second Prize

Save the Goose that can lay the Golden Egg

Absolutely no need to rubbish and dispose of Eskom

Dr McRae always spoke about Eskom's strength of revenues as generated from worlds lowest cost tariffs

The lower the price of electricity is to customers, the greater is the cumulative strength and regularity of cash inflows to service debt.

Electricity Supply Commission, neither for profit nor loss, buy debt on capital markets, invest and serve customers with lowest cost quality electricity.....by being a Top Utility.

Collective National Agenda

Full and Complete Recovery of Eskom (Generation + Customers)

Generation EAF must move towards 100 %
(Thermal Coal)

UNFCCC Commitments 2050, China 2060, India 2070

**Business must be refocused on its purpose to
serve CUSTOMERS**

**(Lowest Costs + Quality of Product and
Service)**

Collective National Agenda

Recovery of Eskom Balance Sheet

MANPOWER + MONEY + MACHINES + MATERIALS

**MANPOWER HAS THE KEY to
RECOVER THE BALANCE SHEET**

**DELIGHTED EMPLOYEES (42000)
+ Youth WIL (84 000)**

Third Prize

MOTRACO – MOZAMBIQUE TRANSMISSION COMPANY

Underwritten by BHP Billiton at Mozal Maputo

**Arnot – Maputo 400 kV, Camden – Edwaleni – Maputo
400 kV**

Independent Transmission Company

Special Purpose Vehicle

Balance Sheet of the RE IPP Investors

Finance and Construct Transmission

***Outstanding Q: The Impact on Affordability and
Regulated Tariffs***



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Thank you!