

67th AMEU Convention

SUSTAINABLE CUSTOMER CENTRIC ELECTRICITY UTILITIES IN THE 4TH AND 5TH INDUSTRIAL REVOLUTION

UNDERSTANDING SOUTH AFRICA'S INDEPENDENT POWER PROCUREMENT PROGRAMME IN TERMS OF TECHNOLOGY, FINANCE AND INVESTMENTS

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Hosted by



DECEMBER 6, 2001 : ENGINEERING NEWS

Financial Times Global Power Company of the Year : Eskom South Africa

**“for technological innovations, technical excellence
and delivery of world’s lowest cost electricity to its
customers”**

**2003 : White Paper – Introduce Renewable Energy into the
National Energy Mix**

**2006 : Ministerial Determination
Procurement of RE from IPP
Pass Through Cost onto the National Tariff**



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March 2020 : IPP Office Reports

R209.4 b vested in 6 422 MW of projects.

Renewable Energy	Value of Investment	Capacity (MW)	Cost (Rm/MW)
Onshore Wind	R80.6 b	3,466	23,25
Solar PV	R65.6 b	2,372	27,65
Solar CSP	R58.4 b	600	97,33
Small Hydro	R1.1 b	92	11,95
Landfill Gas	R3.4 b	18	188,88
Biomass	R 0.3 b	84	3,57



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INVESTMENTS

Mixture of Debt and Equity

Domestic and International Investors

OBSERVATIONS

Gauteng – 18 MW Landfill Gas

KZN – 37 MW Biomass

Mpumalanga – 42 MW Biomass + 3MW Small Hydro

Limpopo – 118 MW Solar PV

Free State – 219 MW Solar PV

North West – 280 MW Solar PV

Cape – 3466 MW Wind + 600 MW CSP + 1755 MW Solar PV

Bid Window 5 : 2600 MW – 63 Solar + 39 Wind



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RE INVESTMENTS

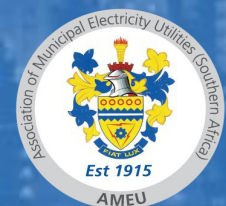
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SUSTAINABILITY

AFFORDABILITY ??

IMPACT ON CUSTOMERS (REDISTRIBUTORS)
& THE CUSTOMERS' CUSTOMER (END CUSTOMER)

FY 2021 : AMEU – 82 446 / 191 852 GWh



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FIRST : HUGH GAP : BASELOAD & INTERMITTENT ENERGY

Energy Resource	2021			2020		
	Cost Rm	Energy Sent Out GWh	Unit Cost R/MWh	Cost Rm	Energy Sent Out GWh	Unit Cost R/MWh
Thermal Coal	74 908	184 305	406	73 664	191 627	384
Nuclear	1 040	9 903	105	1 330	13 252	100
Imports	4 998	8 812	567	4 716	8 568	550
OCGT	4 125	1 457	2 778	4 350	1 328	3 231
Renewables IPP's	27 921	12 821	2 178	24 810	11 247	2 206
OCGT IPP's	2 911	704	3 579	3 250	711	4 049



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SECOND : ATTRACTIVENESS OF IPP's

**Sovereign guarantee of the 91 PPA'S
Contingent liabilities
R178 billion - 2041 [DBSA, 2021].**

NATIONAL TREASURY

**Limited Fiscal Space, Growing Burden, Low Risk
Pass Through Cost to CUSTOMERS**

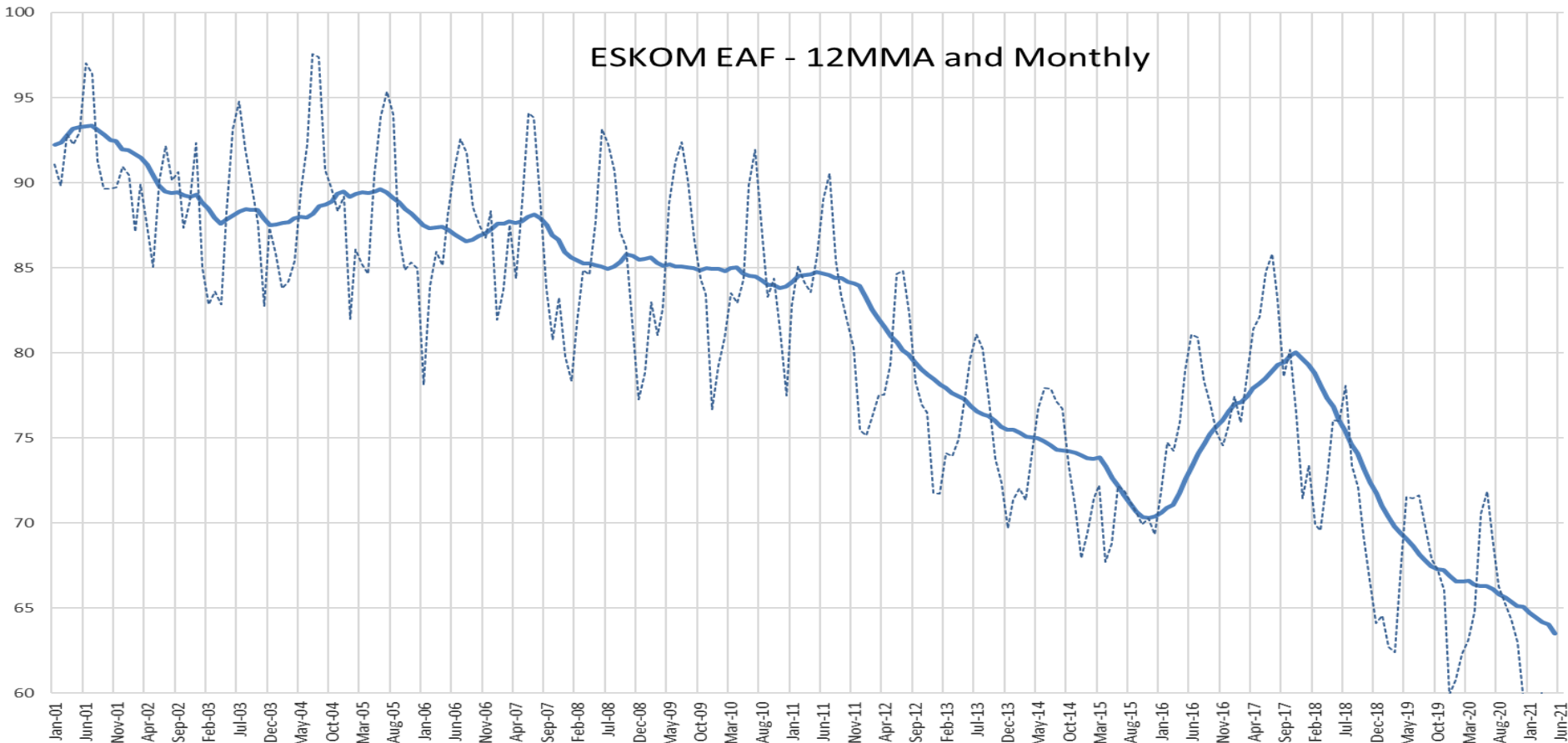
**Rapidly Rising Regulated Tariffs
“worlds lowest cost – distant memory”**



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THIRD : DETERIORATING PERFORMANCE OF THERMAL COAL GENERATION



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NATIONAL KNOT



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ONE STRATEGY

INTRODUCE COMPETITIVE MARKETS : ITSMO
INDEPENDENT TRANSMISSION SYSTEM & MARKET OPERATOR

PRICE DISCOVERY IN REAL TIME

RUNAWAY PRICES & REGULATED PRICE CAPS & MARKET MELTDOWN
MATURE ECONOMIES - COMPETITIVE MARKETS GOOD FOR LOWER PRICES
DEVELOPING ECONOMIES ???

Mixture of Bilateral and Opportunity Sales

DAM Average Peak, Standard and Off Peak Prices (USc/KWh)



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Recommended NATIONAL STRATEGY

**EMBRACE AND DEEPEN RENEWABLE
ENERGY PENETRATION IN DAILY
APPLICATIONS**

**TRUMP CARD
CUSTOMERS**

**CUSTOMER IS KING, CASH IS KING, MILLIONS OF CUSTOMERS ON
YOUR DATABASE – DAILY COMMUNICATION WITH CUSTOMERS**

Open The Door to IR4.0, BIG DATA, Distributed and Virtual Power Stations



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Recommended NATIONAL STRATEGY

**“EVERY ROOF TOP MUST BECOME A
GENERATOR OF ENERGY”**

Solar PV, Vertical Axis Wind Harvesting, Rainfall Harvesting

AMEU LEADERSHIP

**(TALK WITH NERSA + SALGA + ESKOM + DMRE + NT + DBSA + World
Bank + UNFCCC)**

Go with Academia, SAAE, SAIEE, SAICE, SAIMechE,....



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Conclusion

1. **Reposition all redistributors** - Generators of RE electricity

2. **Strengthen the grid with storage** – start with pumped storage – water, open loop compressed air, closed loop compressed nitrogen,....

3. **Deepen electricity** - national carrier of energy

Embrace “electric mobility” – convert all existing cars to electric

Go back to Dr McRae’s strategy of “worlds lowest cost of electricity” AND “electricity for all”

Lower energy costs with all connected will spur new jobs, new economic growth & national prosperity

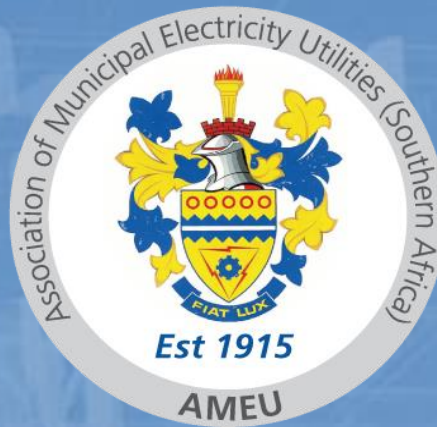
4. **Promote “Corporation Easy Payment Schemes”; SARS Tax Rebates**
Help CUSTOMERS to install Energy Harvesters

5. **Start the talking for Climate Change FUNDING – UNFCCC,**



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Thank you

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