



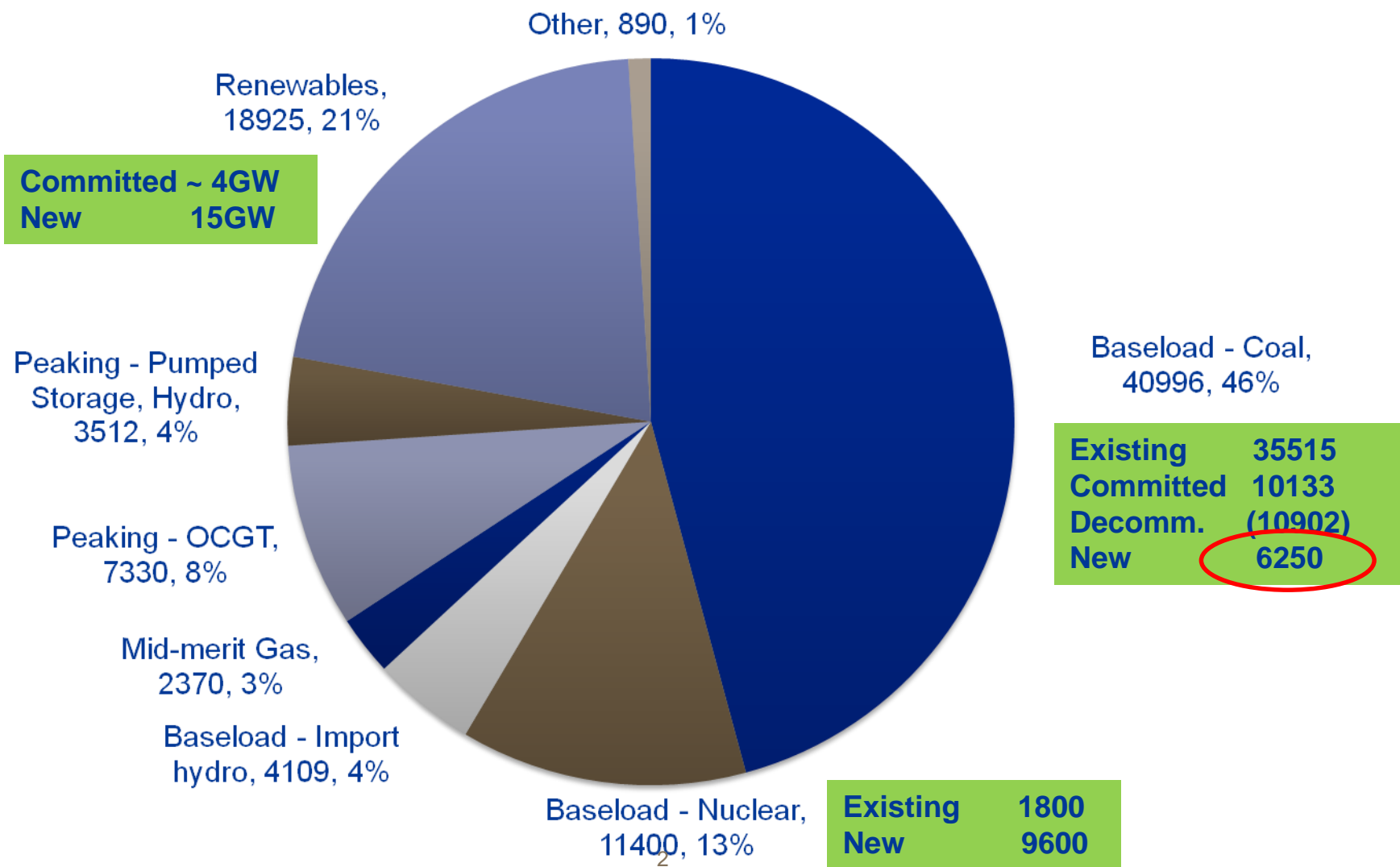
FFF IPP Conference: The role of Eskom in future coal based generation?

Barry MacColl

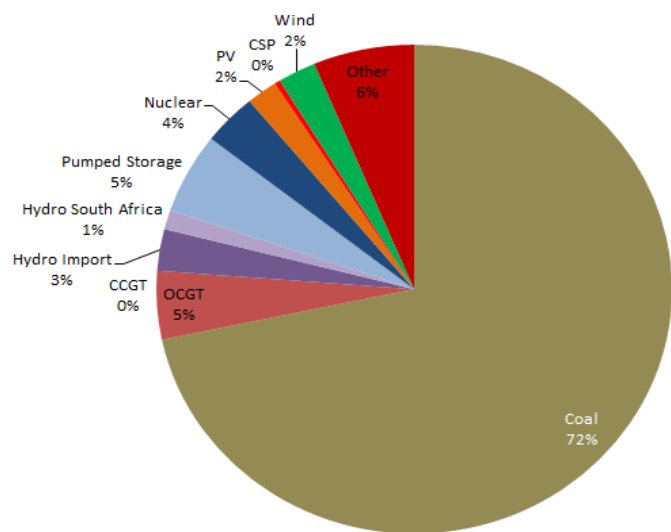
General Manager – R,T&D

17 March 2016

RSA Electricity capacity, 2030 (MW)

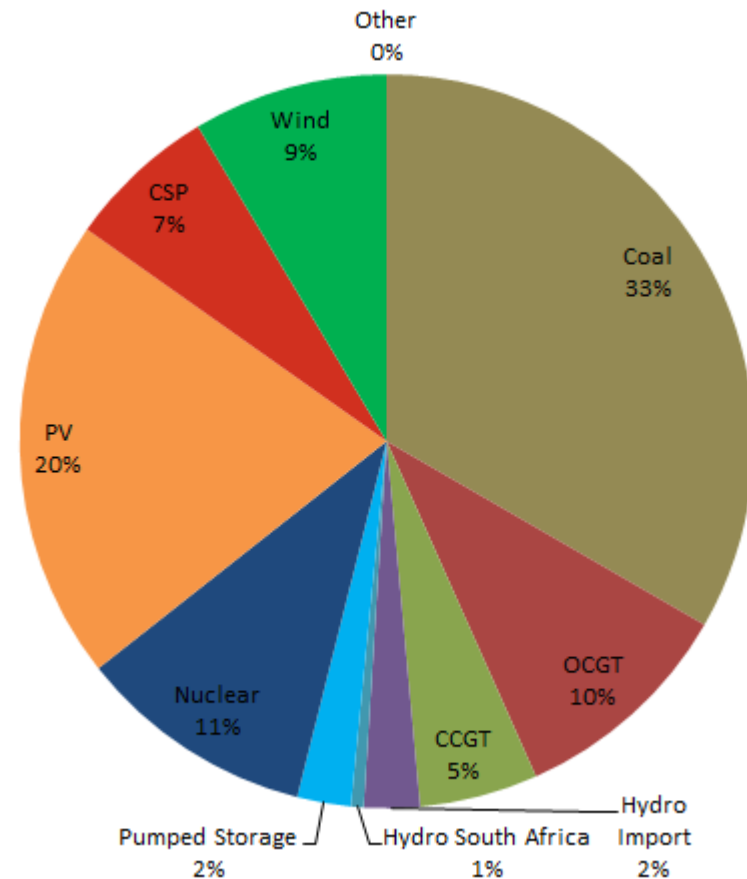


National Energy Mix is Changing ... Does Eskom want to retain significant share?



40GW

Today (2015)

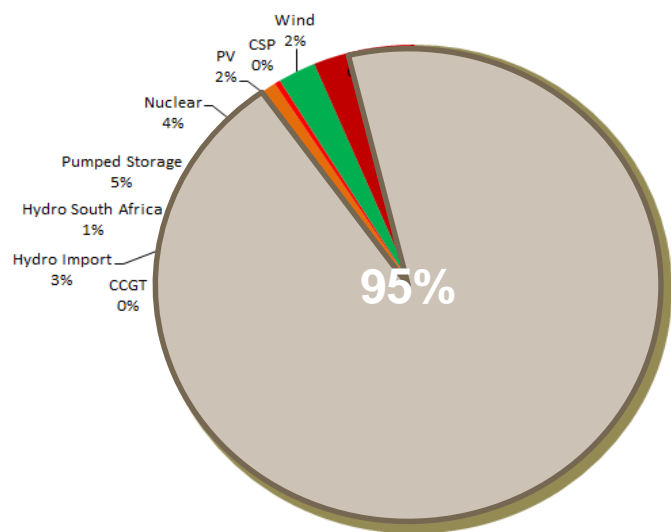


120GW

Future (2050)

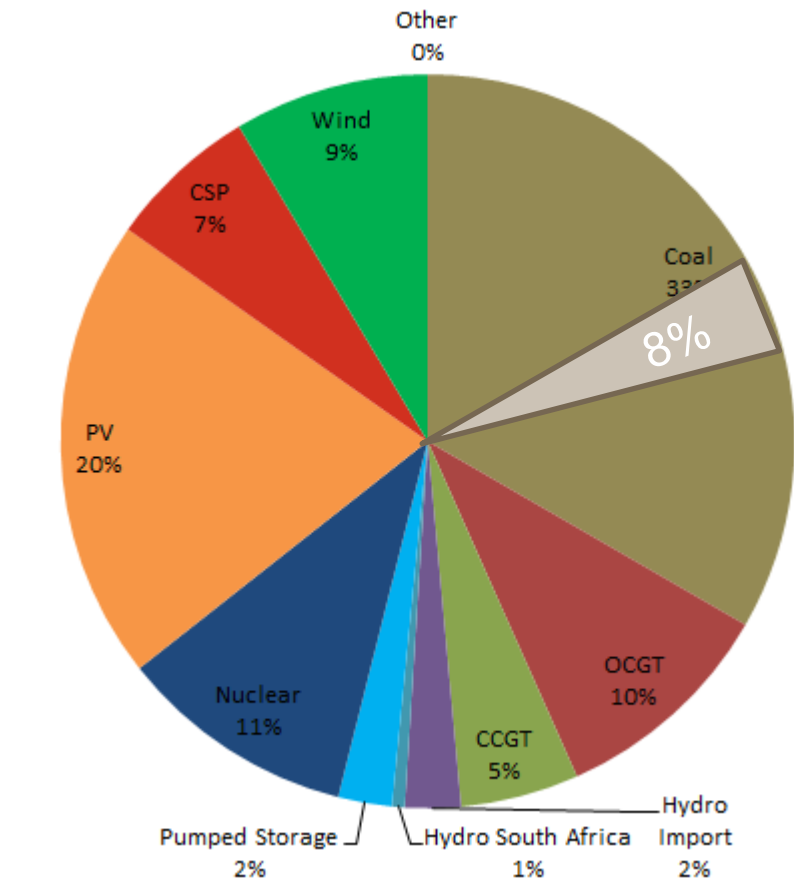
Based on IRP 2010 and 3% growth

National Energy Mix is Changing ... Eskom must invest and diversify to retain significant share



40GW

Today (2015)



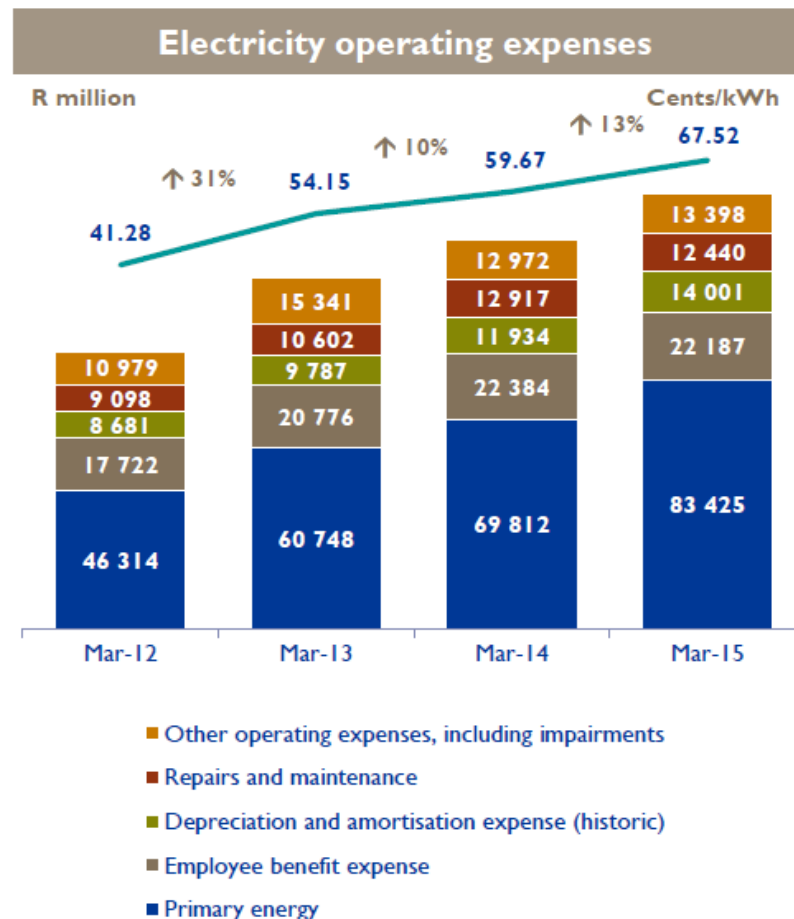
120GW

Future (2050)

Based on IRP 2010

Primary Energy Costs are over 50% of the Eskom income statement and increasing fast

- The **electricity operating cost** per kWh sold is 67.52c/kWh¹ compared to the 2013/14 actual of 59.67c/kWh
- **Primary energy** cost has increased by 19% year-on-year, significantly above both inflation and the 8% tariff increase
- **Other operating expenses** within our control have remained fairly flat due to cost-savings and efficiency initiatives under the **BPP programme**, reflecting only a 2% increase year-on-year
- Headcount reduced by 1% to **46 490 group** employees (2013/14: 46 919)
- **Impairment on arrear debt** amounted to 2.17% of revenue (2013/14: 1.10%)



1. Cents/kWh figures are calculated based on total electricity sales numbers for the period.

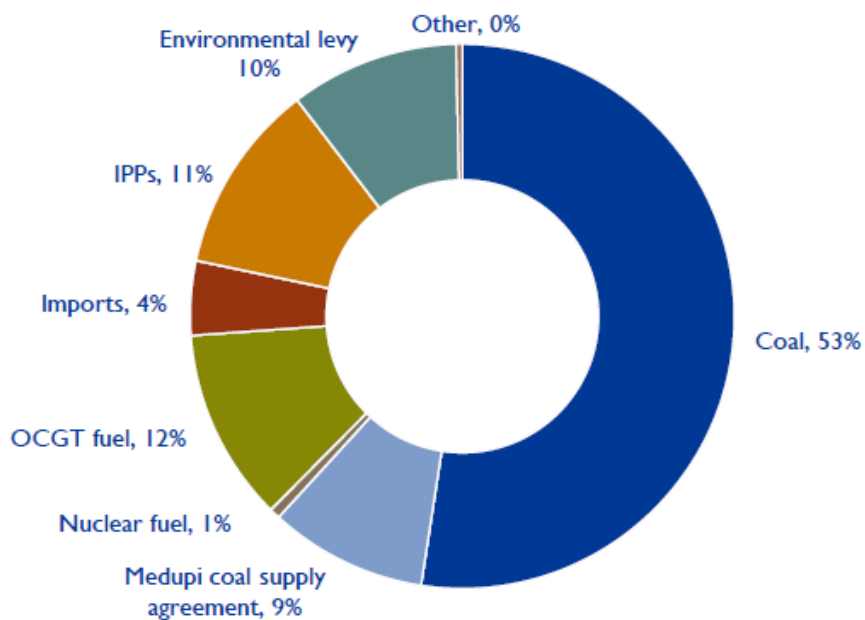
Source: Eskom Annual Report – 2015

Refer to pages 96-99 in the IR for more information

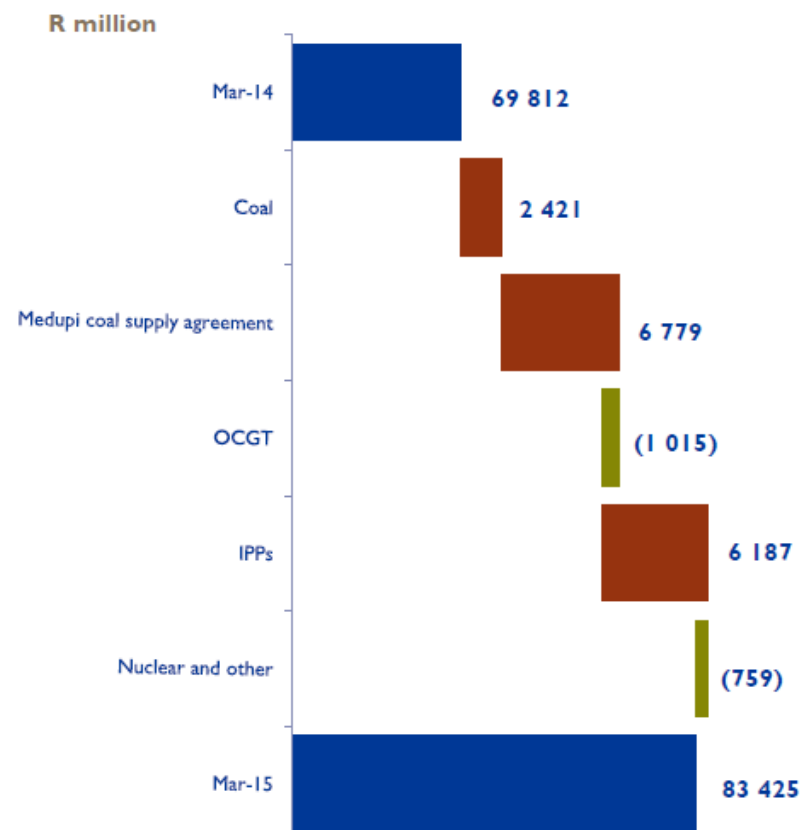
A company heavily affected by Coal movements

Primary energy cost increased by 19% year-on-year, significantly above inflation and the 8% tariff increase

Primary energy cost breakdown



Year-on-year analysis



Source: Eskom Annual Report – 2015

Refer to page 97 in the IR for more information

Build Programme - current P80 scheduled dates

Medupi Commercial operation dates

Unit 6 (794MW)	<input checked="" type="checkbox"/> 23 August 2015
Unit 5 (794MW)	<input type="checkbox"/> March 2018
Unit 4 (794MW)	<input type="checkbox"/> July 2018
Unit 3 (794MW)	<input type="checkbox"/> June 2019
Unit 2 (794MW)	<input type="checkbox"/> December 2019
Unit 1 (794MW)	<input type="checkbox"/> May 2020



Kusile Commercial operation dates

Unit 1 (800MW)	<input type="checkbox"/> July 2018
Unit 2 (800MW)	<input type="checkbox"/> July 2019
Unit 3 (800MW)	<input type="checkbox"/> August 2020
Unit 4 (800MW)	<input type="checkbox"/> March 2021
Unit 5 (800MW)	<input type="checkbox"/> November 2021
Unit 6 (800MW)	<input type="checkbox"/> September 2022

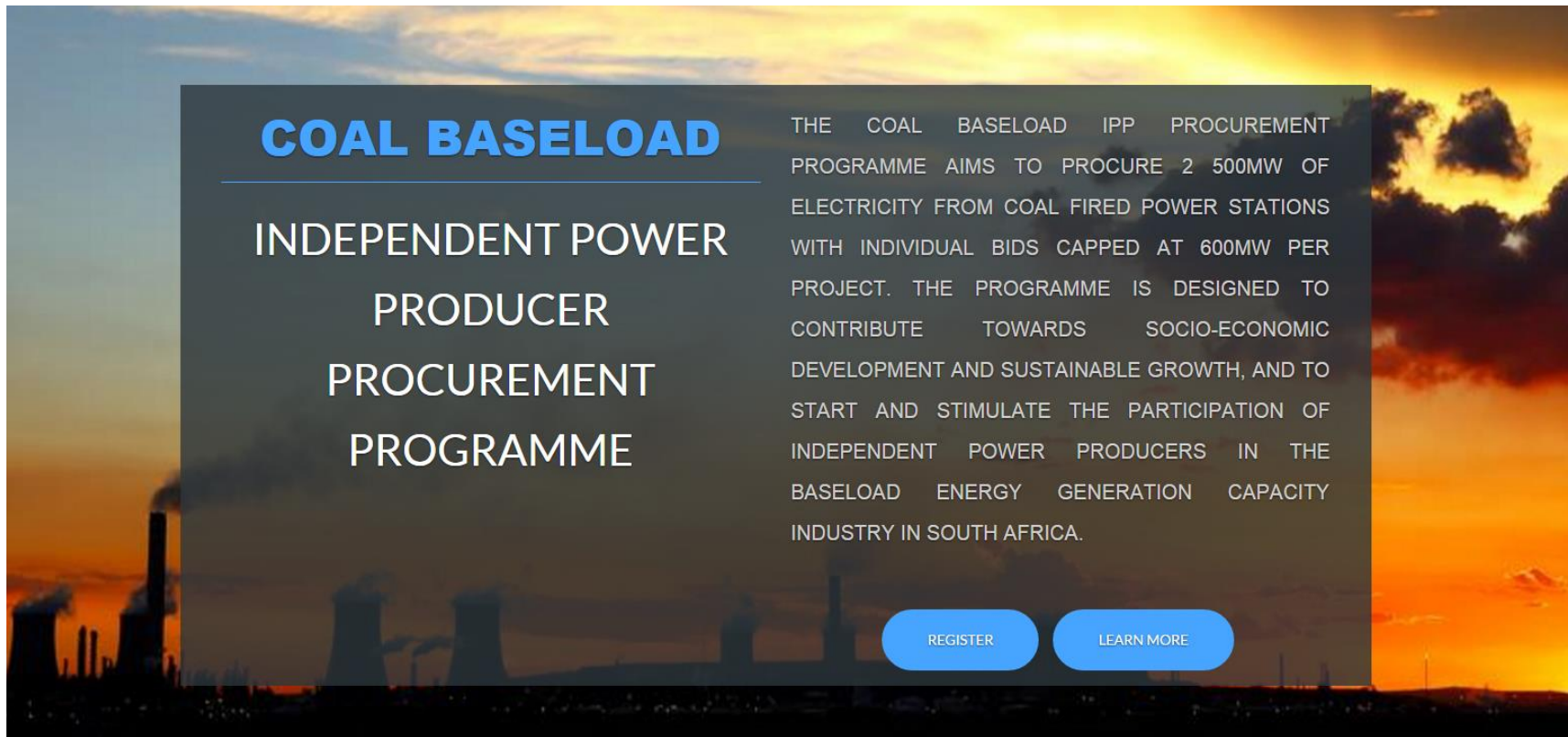


Ingula Commercial operation dates

Unit 3 (333MW)	<input type="checkbox"/> January 2017
Unit 4 (333MW)	<input type="checkbox"/> March 2017
Unit 2 (333MW)	<input type="checkbox"/> May 2017
Unit 1 (333MW)	<input type="checkbox"/> July 2017



....although funding and permitting remain ahead!



COAL BASELOAD

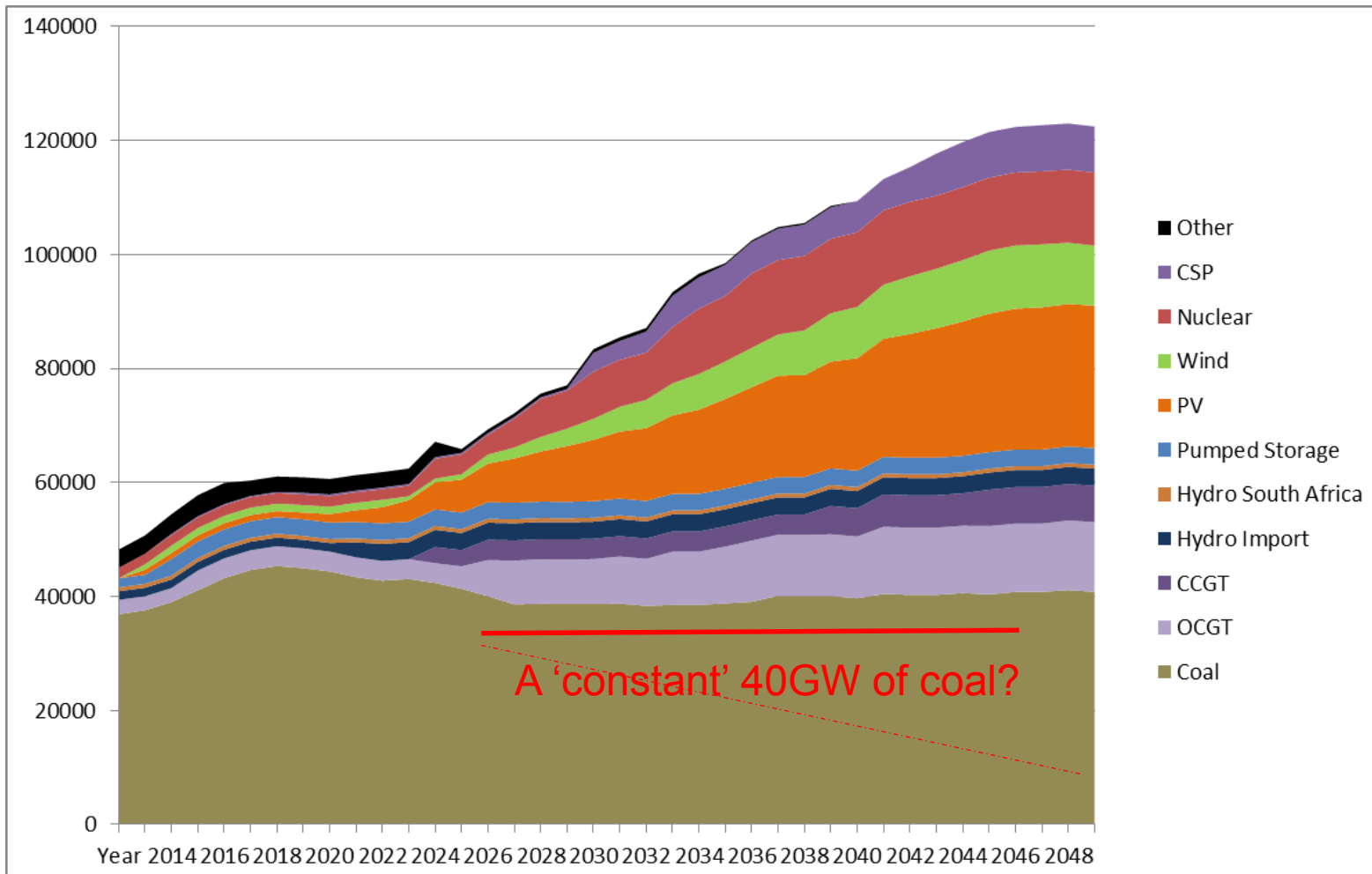
**INDEPENDENT POWER
PRODUCER
PROCUREMENT
PROGRAMME**

THE COAL BASELOAD IPP PROCUREMENT PROGRAMME AIMS TO PROCURE 2 500MW OF ELECTRICITY FROM COAL FIRED POWER STATIONS WITH INDIVIDUAL BIDS CAPPED AT 600MW PER PROJECT. THE PROGRAMME IS DESIGNED TO CONTRIBUTE TOWARDS SOCIO-ECONOMIC DEVELOPMENT AND SUSTAINABLE GROWTH, AND TO START AND STIMULATE THE PARTICIPATION OF INDEPENDENT POWER PRODUCERS IN THE BASELOAD ENERGY GENERATION CAPACITY INDUSTRY IN SOUTH AFRICA.

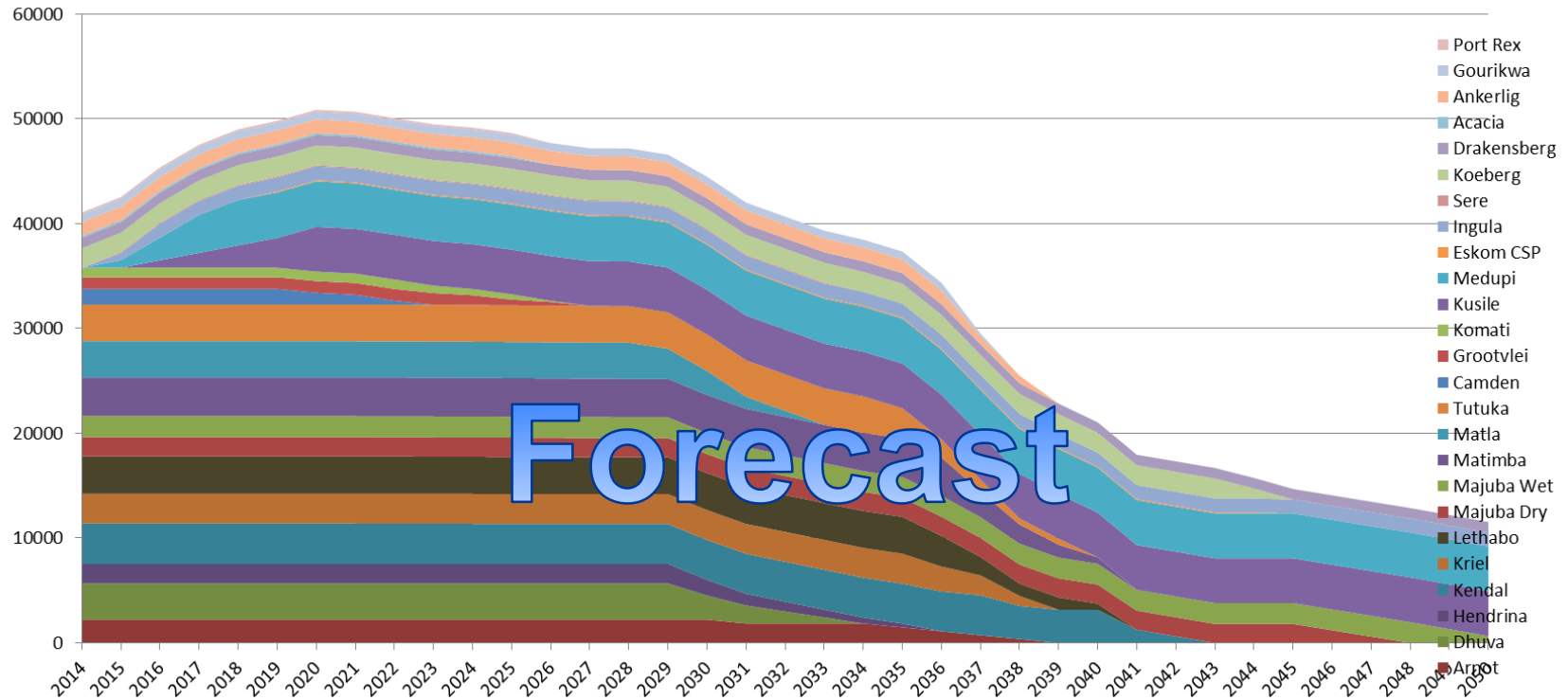
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The Changing Energy Mix is driving Market Changes – 40GW of Coal ‘Flatline’ in 3% SA growth scenario?

- IPP’s are being contracted for Wind, Solar, Nuclear, Gas
- and Coal – 2500MW in round one. Assume 6250MW coal total in IRP.
- Does Coal flat line or decline?



Decommissioning of Generation Plant is a complex matter that will not begin before 2020



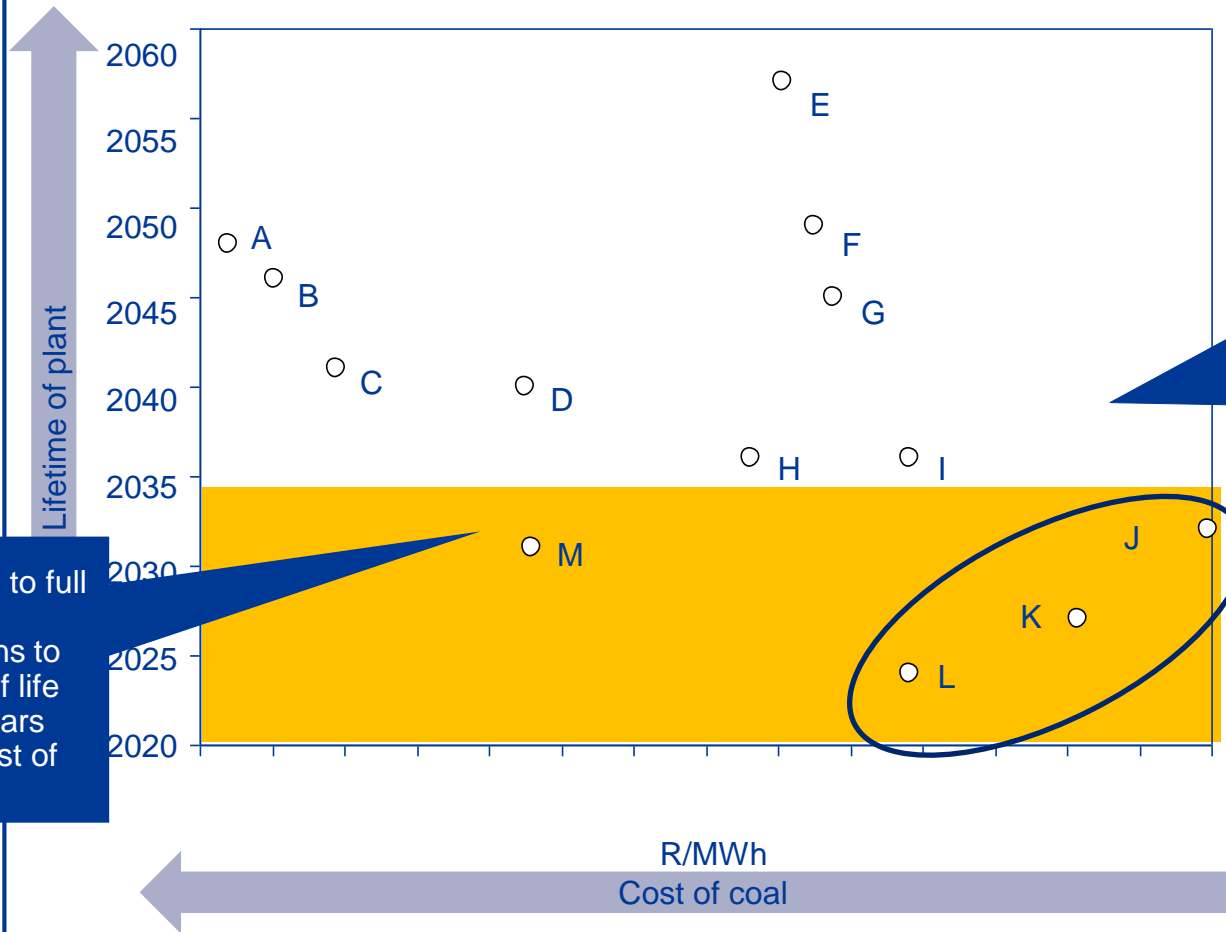
According to current planning, decommissioning of Eskom plants is expected to start with Camden, Grootvlei and Komati
All > 2020

By 2050 after decommissioning
9.2 GW from Eskom
+ Add 6.250 GW of IPP coal
=15.5 GW coal confirmed in 2050 horizon
Subtract 40 GW (earlier slide)
= ~ 25 GW for potential development
2030 to 2050.

Life-ex versus decommission decisions based on cost and useful life

Power plant reaching end of life within 20 years

Cost of coal vs. current technical lifetime for coal fired plants

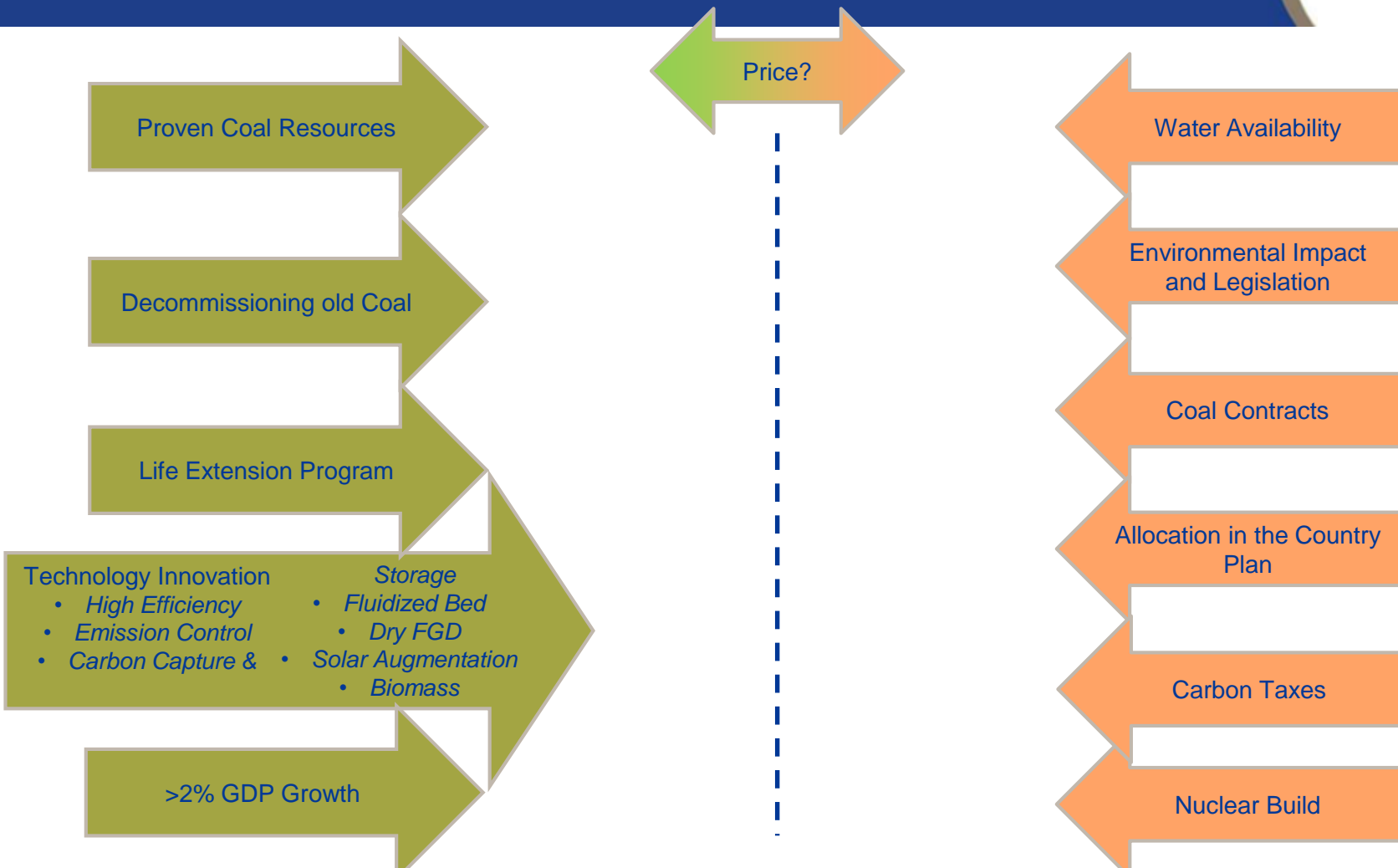


We will run M to full capacity and explore options to extend time of life beyond 60 years due to low cost of coal

Decommissioning of stations with more than 20 years of lifetime will be planned closer to the date once more reliable estimates on demand and costs are available

J,K,L will stop continuous production starting ~2020. They will be decommissioned at their end of life

Coal Future - Driving and Restraining Forces 2030 - 2050



The Country's coal build decisions for IPPs will be made in the next few years to **2020**. By this stage we should also have clarity on the Nuclear decision. And so new build coal decisions post 2020 will need to be made in 2020-2025 period based on the above forces for commissioning post 2030. Up to that time the coal investment will be existing IPP and Eskom Coal investments. "But if load grows dramatically, nuclear is abandoned, large portions of the existing fleet have to be decommissioned...then new Coal may come into play."

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THANK YOU

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