

Coal in South Africa's future

Bryce McCall

Coal phase out workshop

Feb 2019



ERC

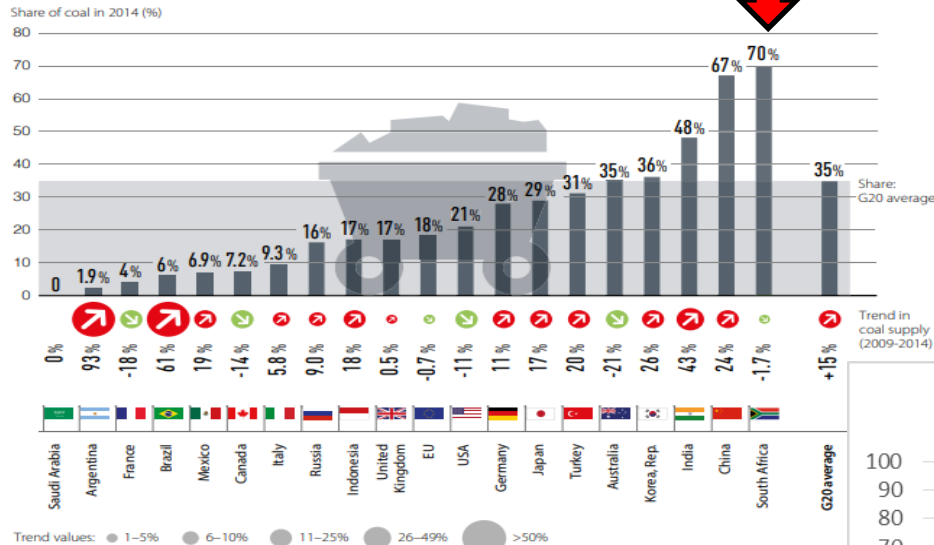
ENERGY RESEARCH CENTRE
University of Cape Town



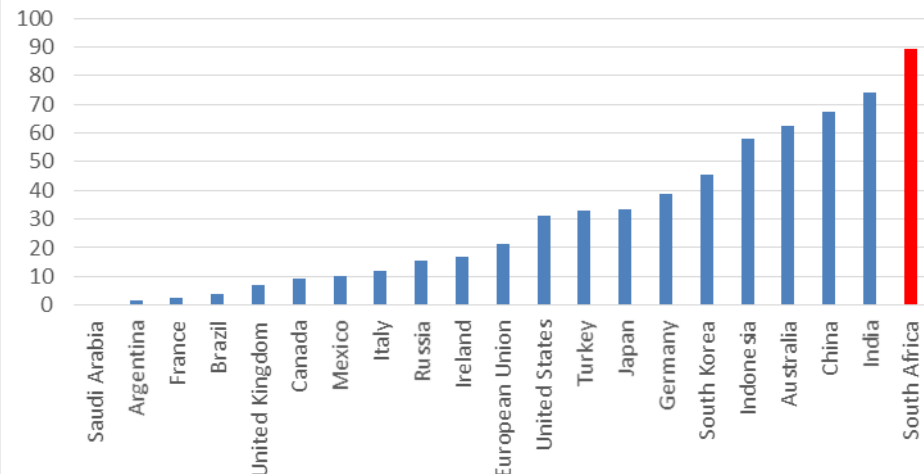
Climate
Transparency

South Africa and coal

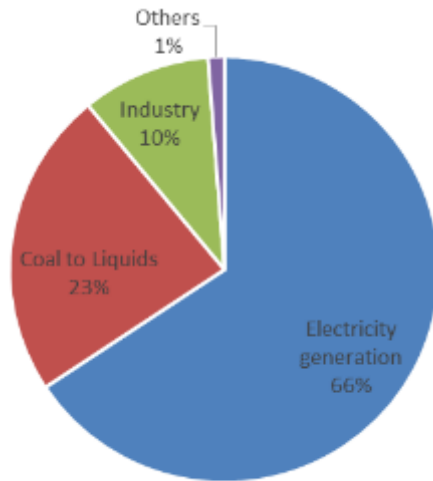
SHARE AND TREND OF COAL IN TOTAL PRIMARY ENERGY SUPPLY (2009-2014)



Share of coal in electricity generation (%), 2017



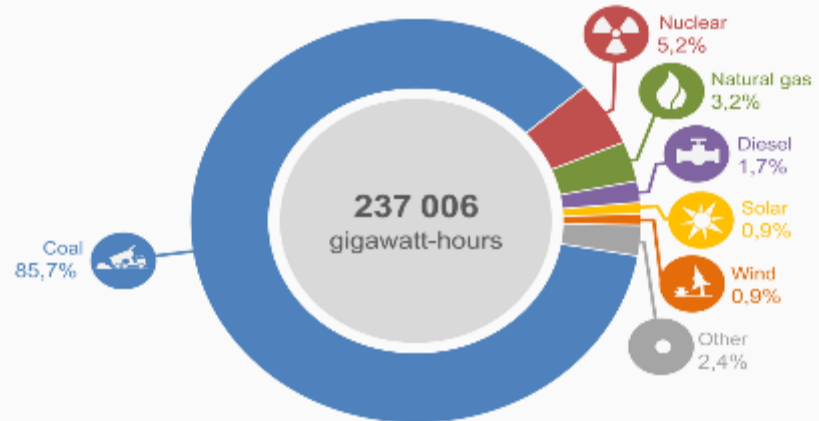
Backbone of the energy system



Source of primary energy for electricity, and liquid fuels

Coal remains South Africa's dominant source of energy

Total electricity generated by source, 2016



Excludes municipalities and enterprises that distribute liquefied petroleum gas (LPG) Source: Electricity, gas and water supply industry, 2016 (Table 11f)

STATS SA
STATISTICS SOUTH AFRICA

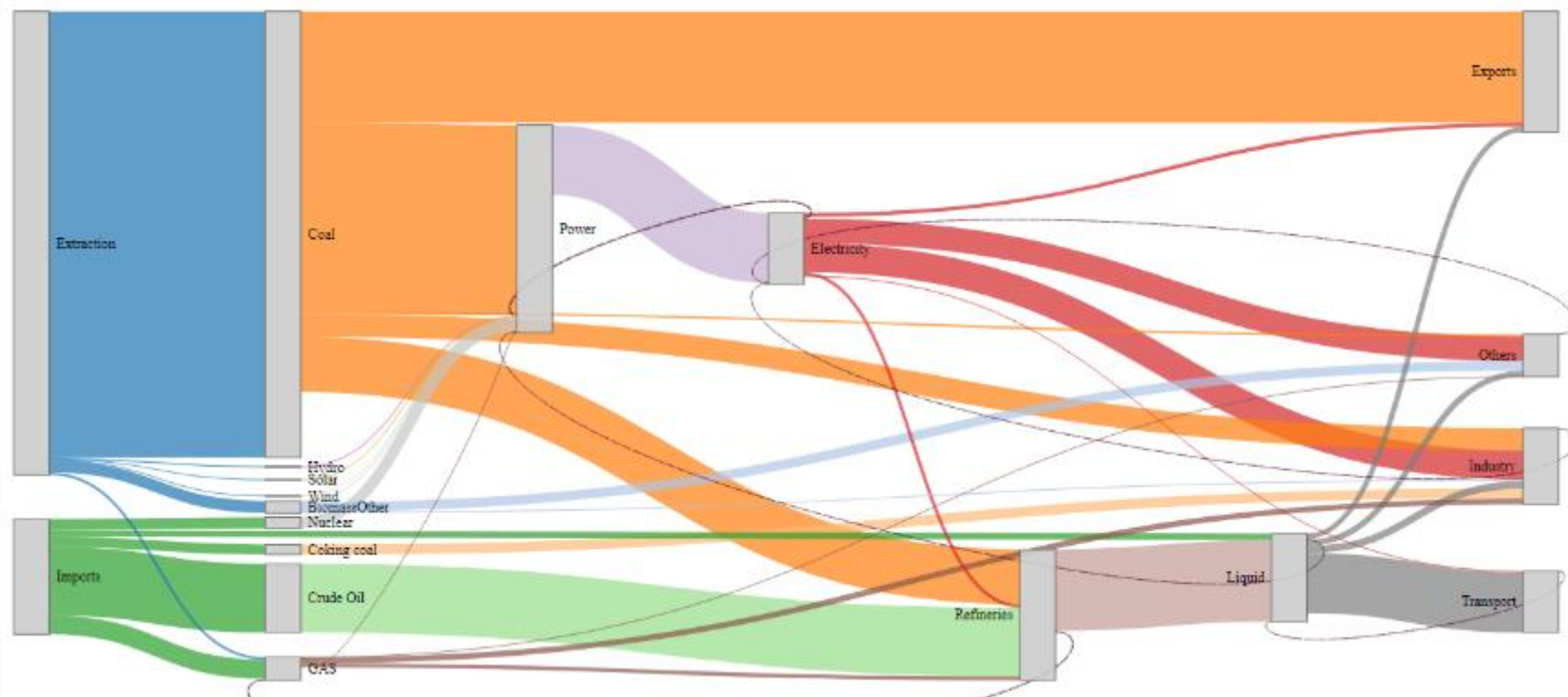


THE SOUTH AFRICAN ENERGY EFFICIENCY FUND



ERC

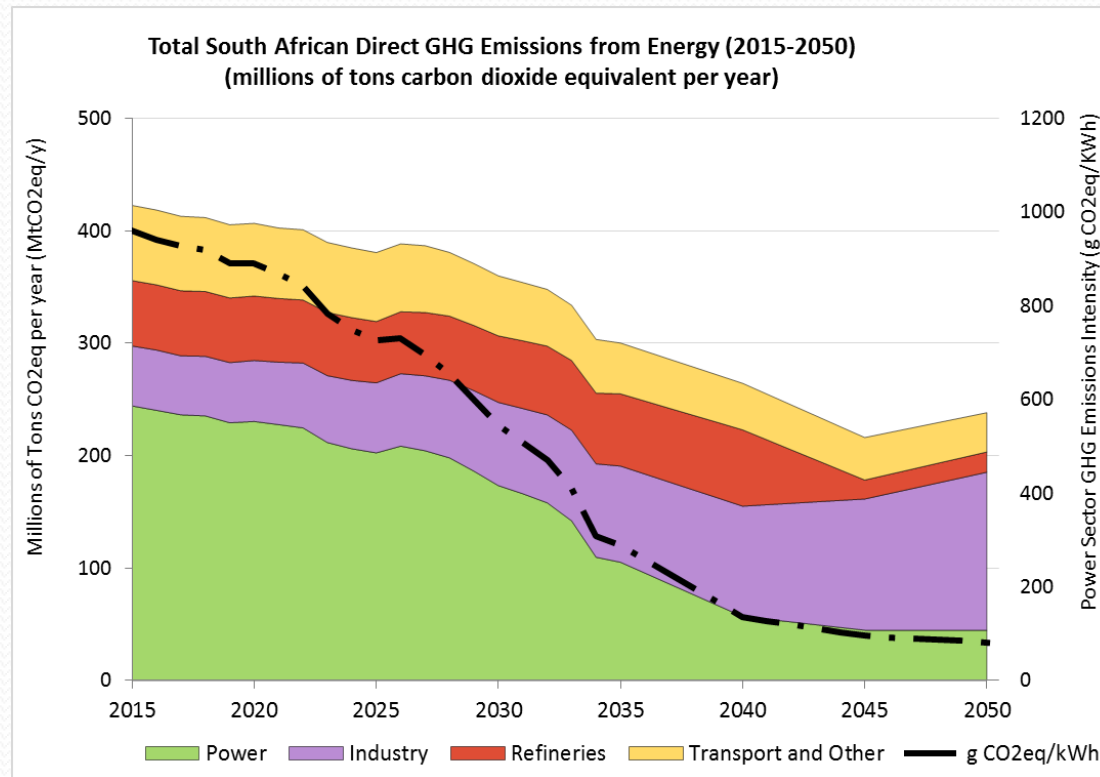
ENERGY RESEARCH CENTRE
University of Cape Town



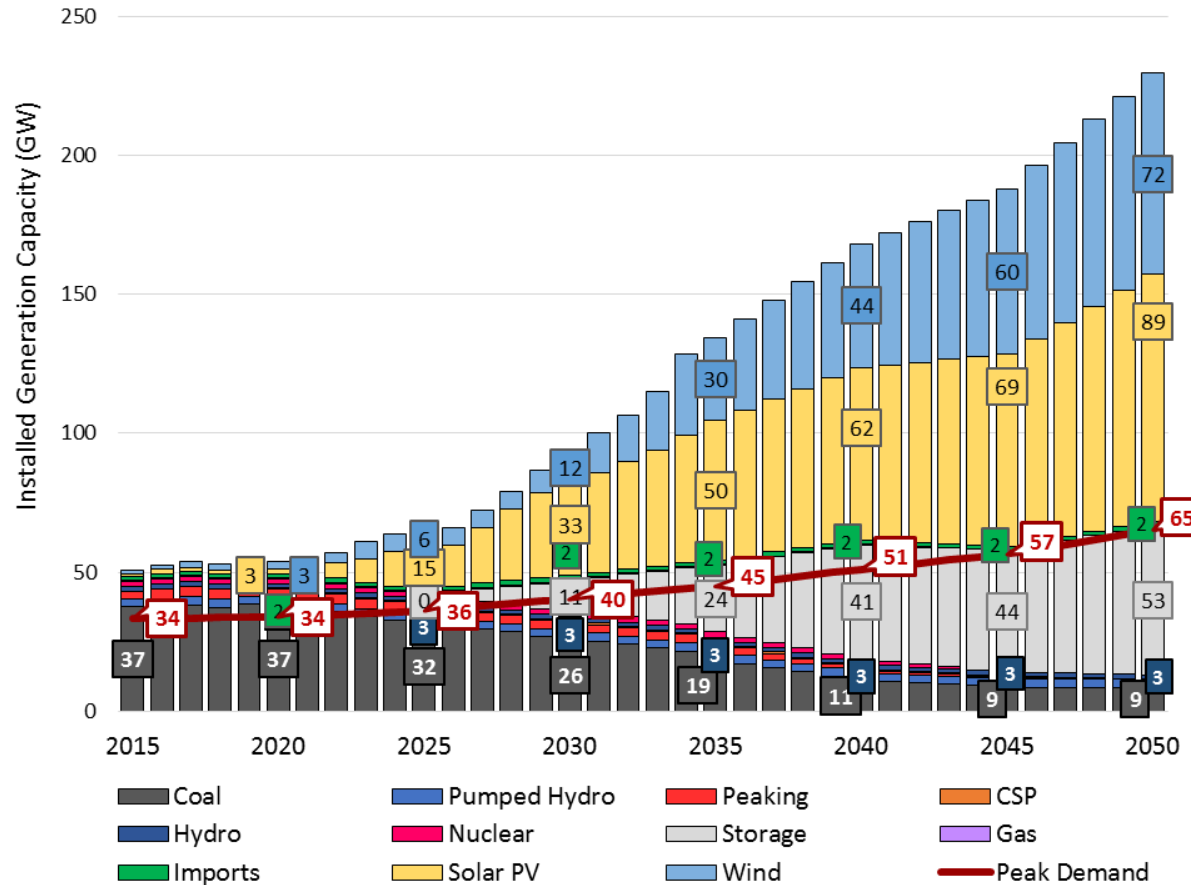
Reference least cost to 2050

(no policies)

- Long term: industry is biggest taker of coal



Power Sector Total Installed Generation Capacity (2015 - 2050)



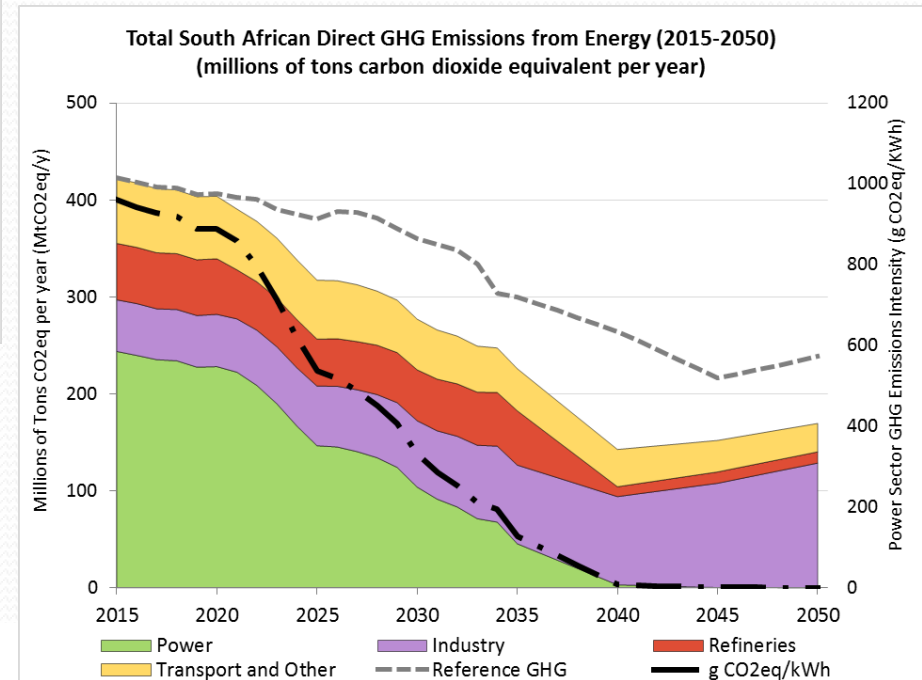
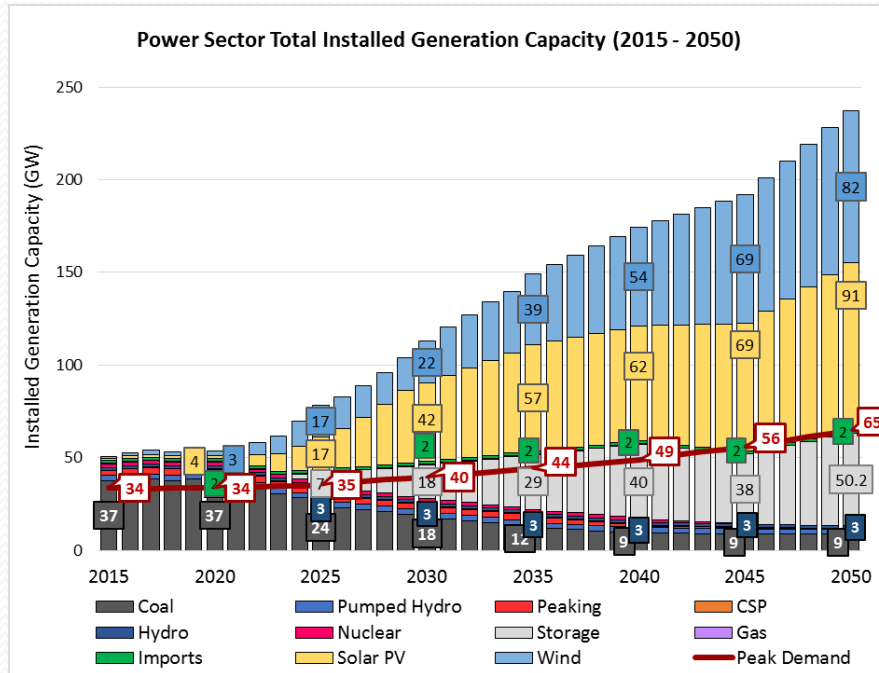
Points of interest:

Only new RE
Storage vs Gas
New RE build rates
Significant storage by
mid 2020s

Cost optimal mitigation

(South Africa in a “Well below 2C” scenario)

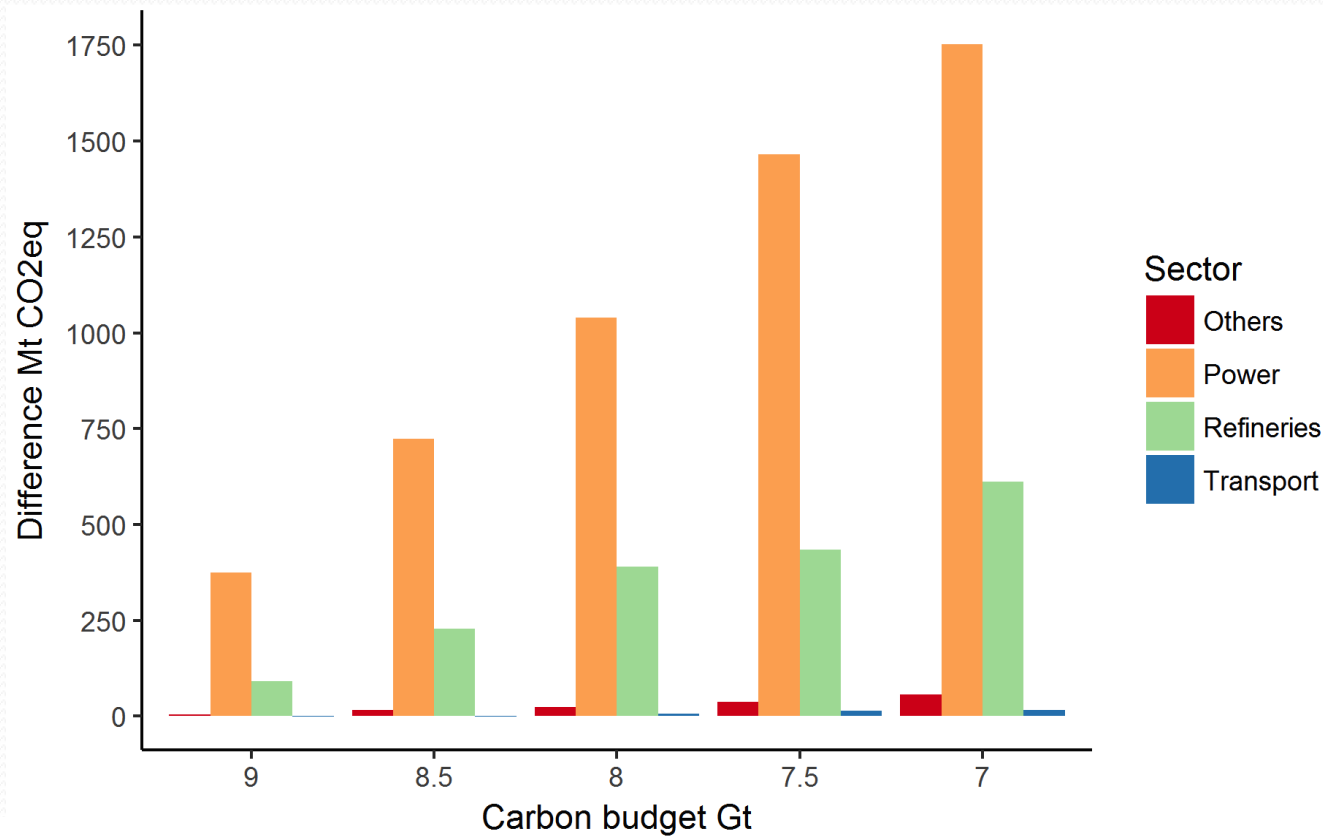
Results for “well below 2C”



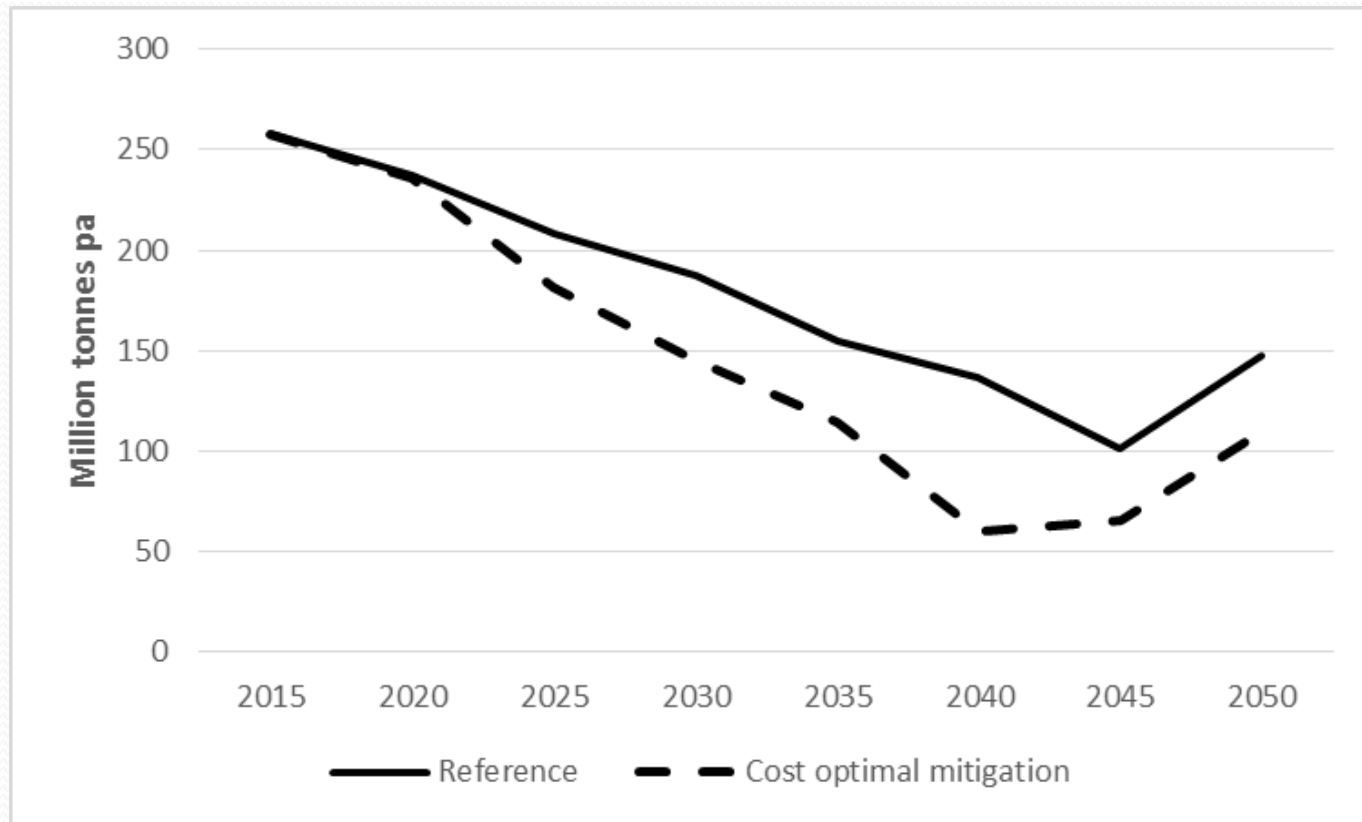
ERC

ENERGY RESEARCH CENTRE
University of Cape Town

Sector sensitivity to mitigation



Coal production



Conclusions

- Without any policy: coal production declines based on cost (accelerated in << 2C scenario)
- Rollout of storage for power sector – new industries in SA
- Coal for industry consumption – role of industry and businesses



ERC

ENERGY RESEARCH CENTRE
University of Cape Town