



The state of coal mining in South Africa

Coal Industry Day | Henk Langenhoven | 24 July 2019



Contents



The state of coal mining in South Africa



Where is it all going: the future



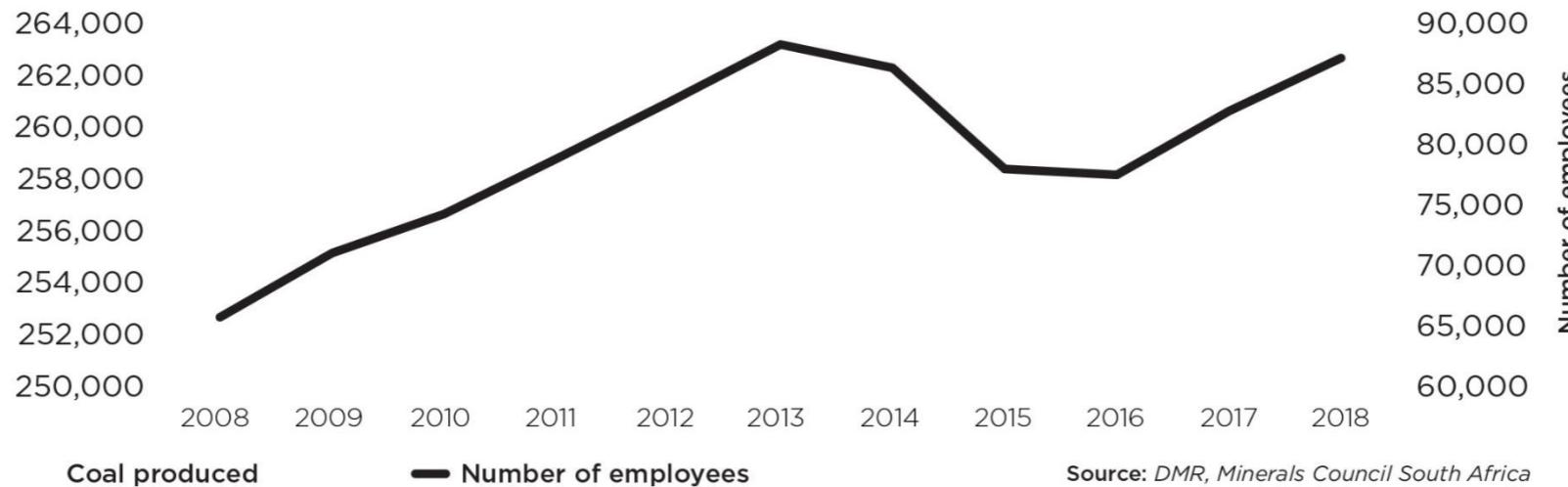
Managing the transition

The state of coal mining in South Africa

This is coal mining 2018



Coal production and employment: 2008 - 2018



Source: DMR, Minerals Council South Africa

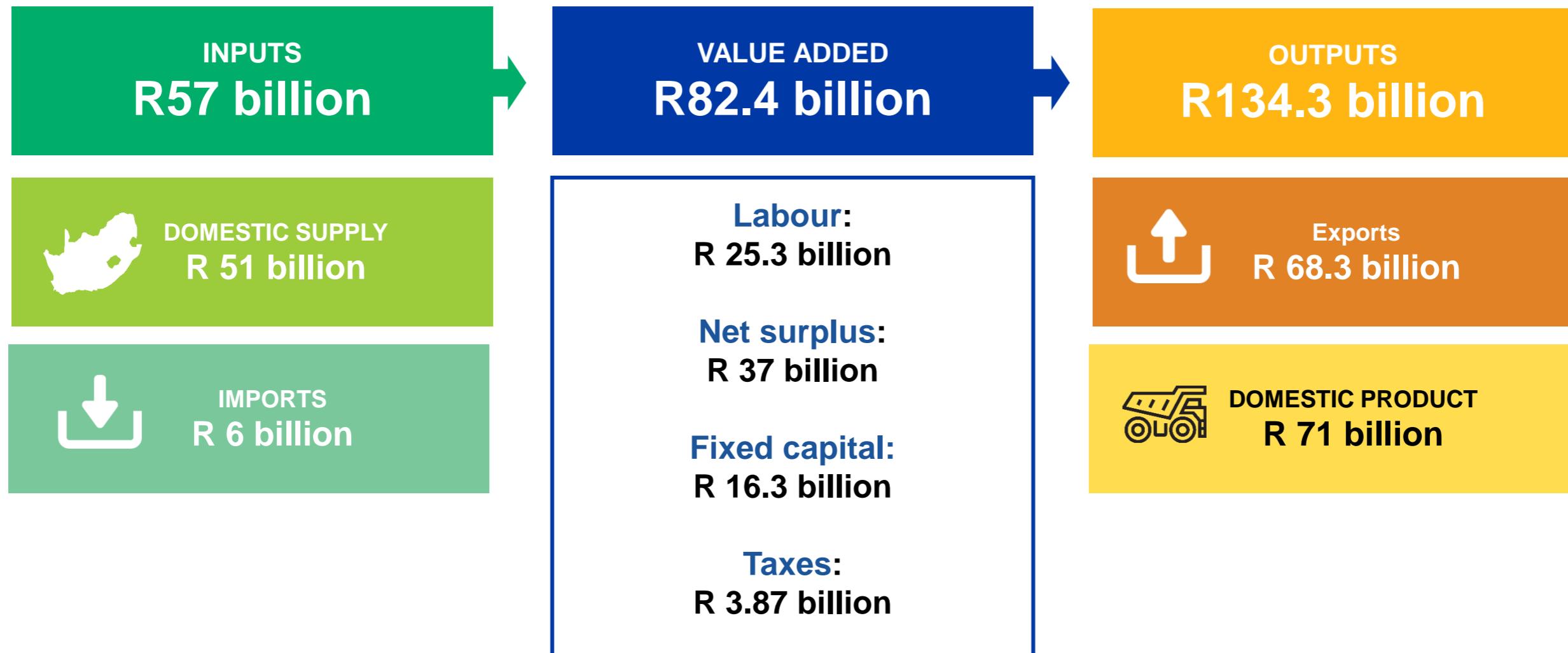
Production
252.6
MILLION TONNES
0.16%

Total sales
R139.4
BILLION
7%

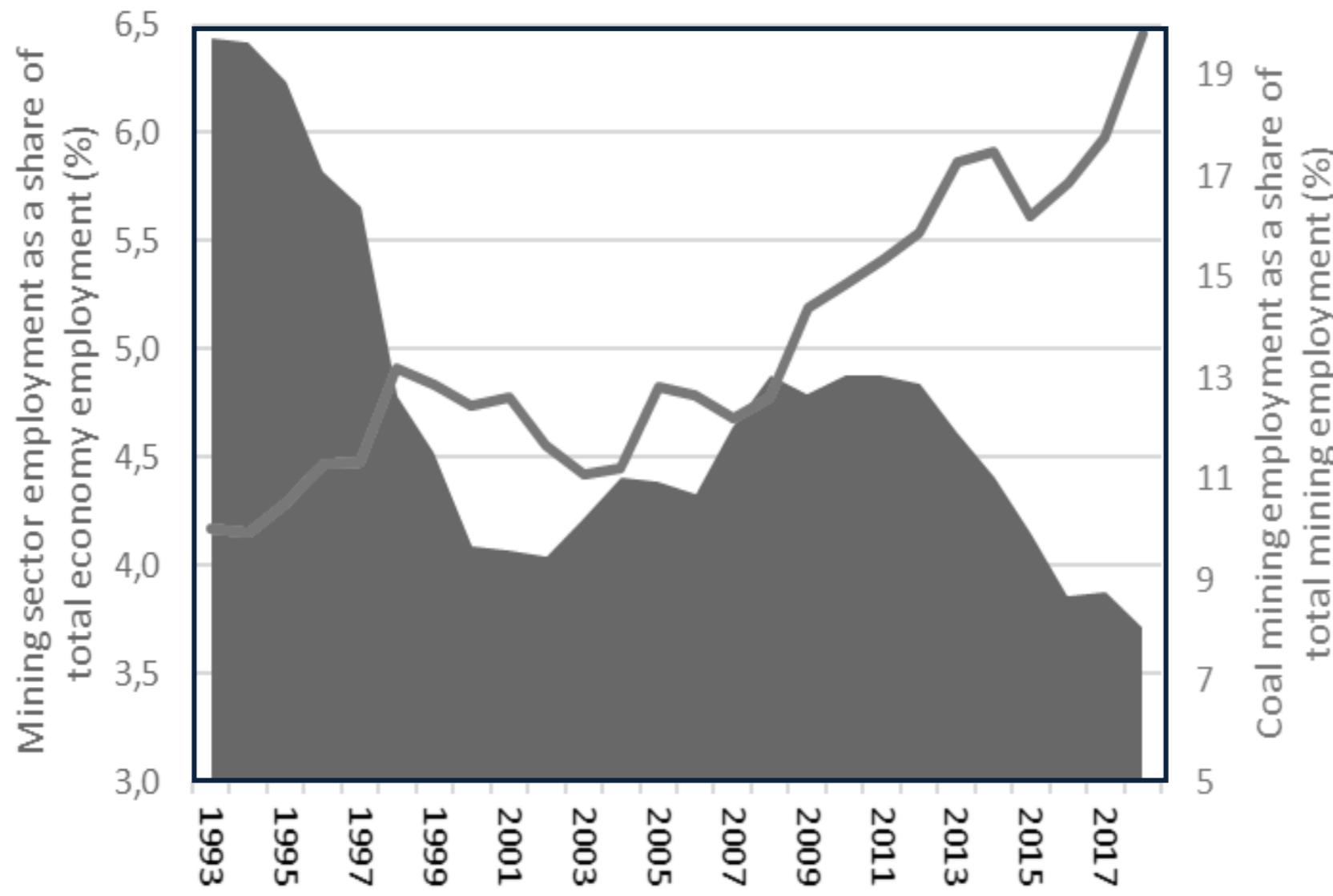
Value of percentage exported
49%



Coal sector components: 2018



Coal industry employment on the rise



Source: Statistics SA

Coal mining sector is a price taker

Certainty of demand (domestic and export) is everything



Exports **49%** of coal mining production by value;
75 million tons



Exposed to international coal prices and Eskom primary energy prices



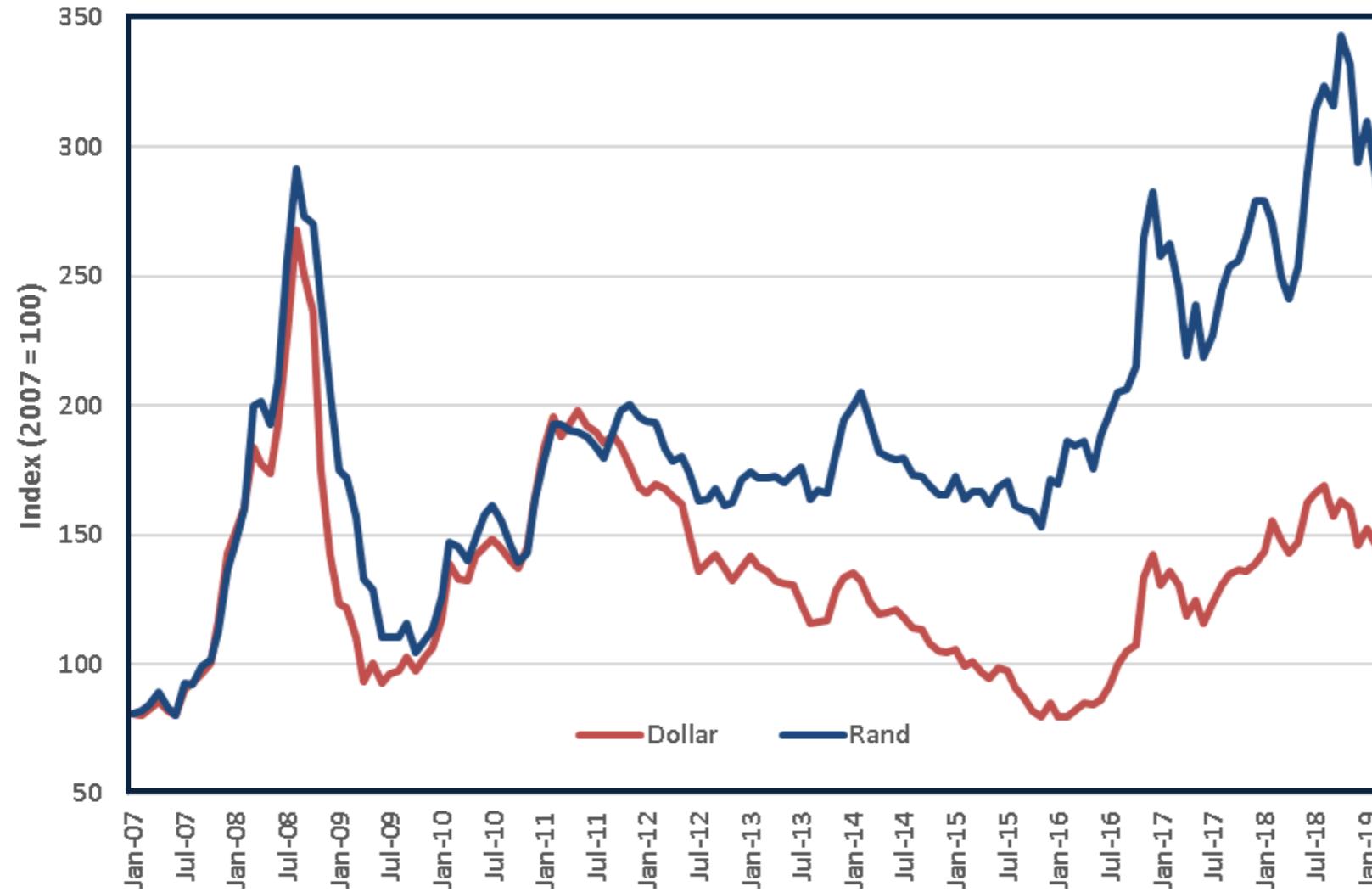
Exposed to Rand exchange rate fluctuations and Eskom shenanigans



Exposed to a cost structure that is overwhelmingly determined by administered prices

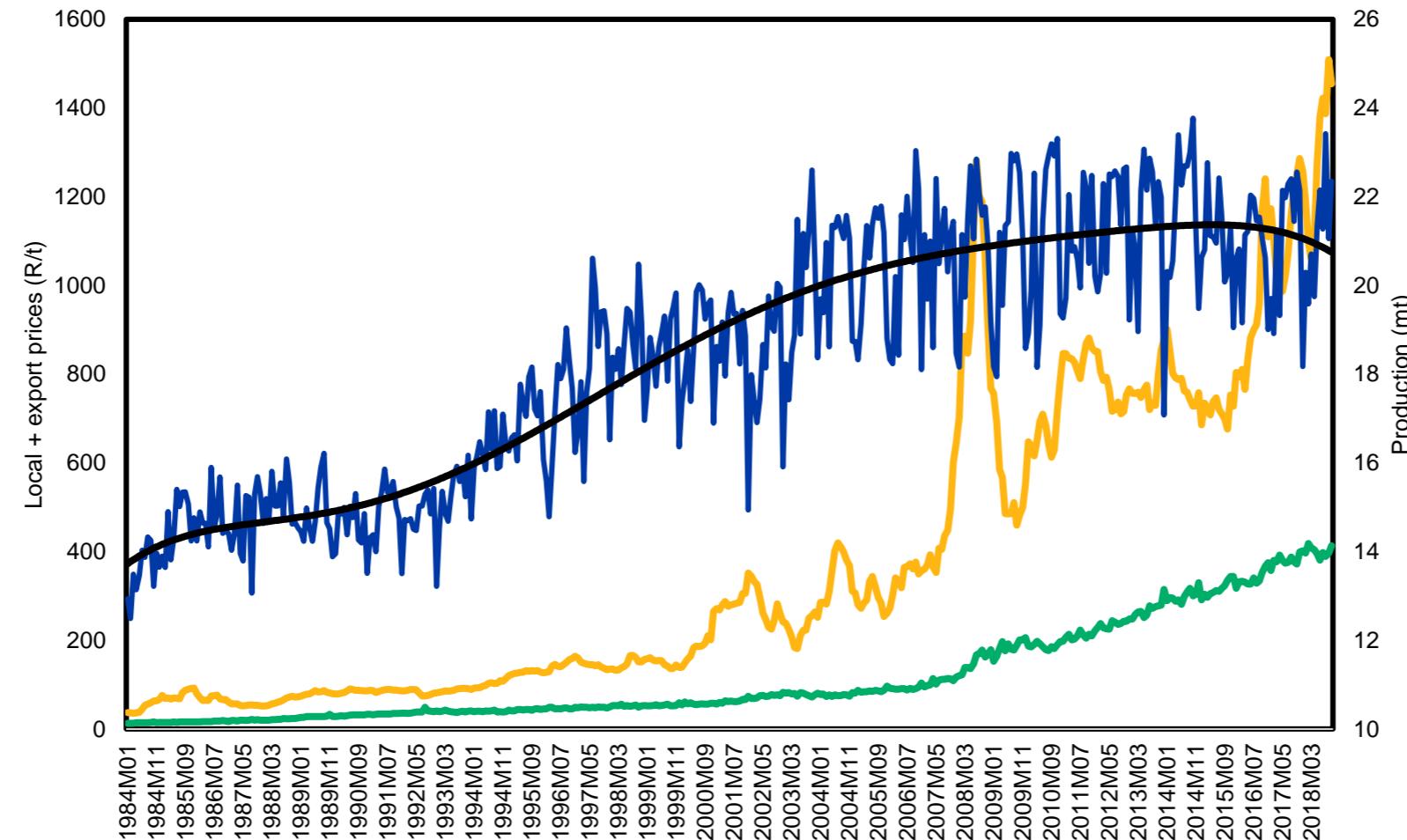
Sources: SA Reserve Bank, Statistics South Africa, Minerals Council South Africa

Coal price movements



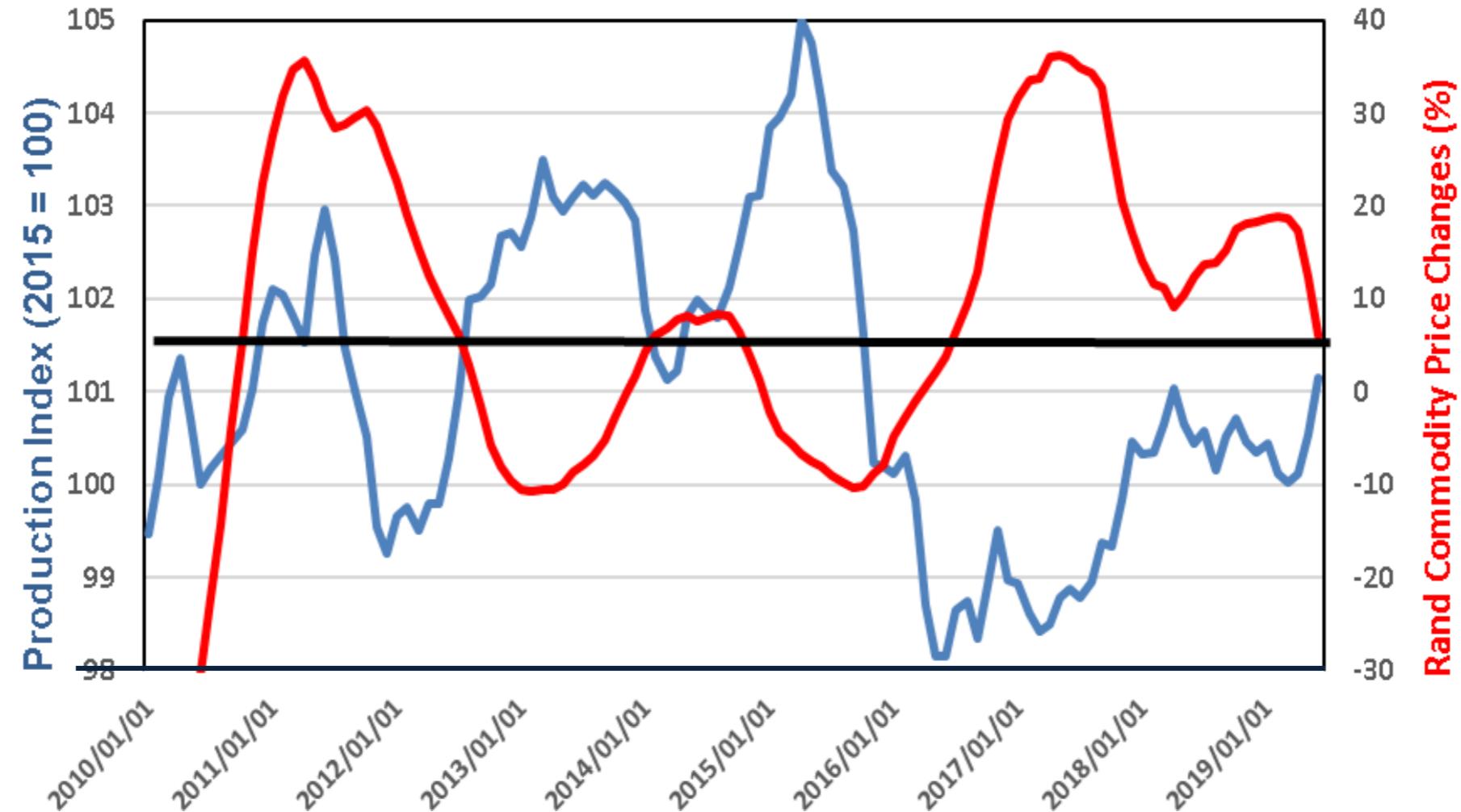
Source: World Bank, Stats SA, SA Reserve Bank, Minerals Council South Africa

Coal production has failed to respond to increases in prices



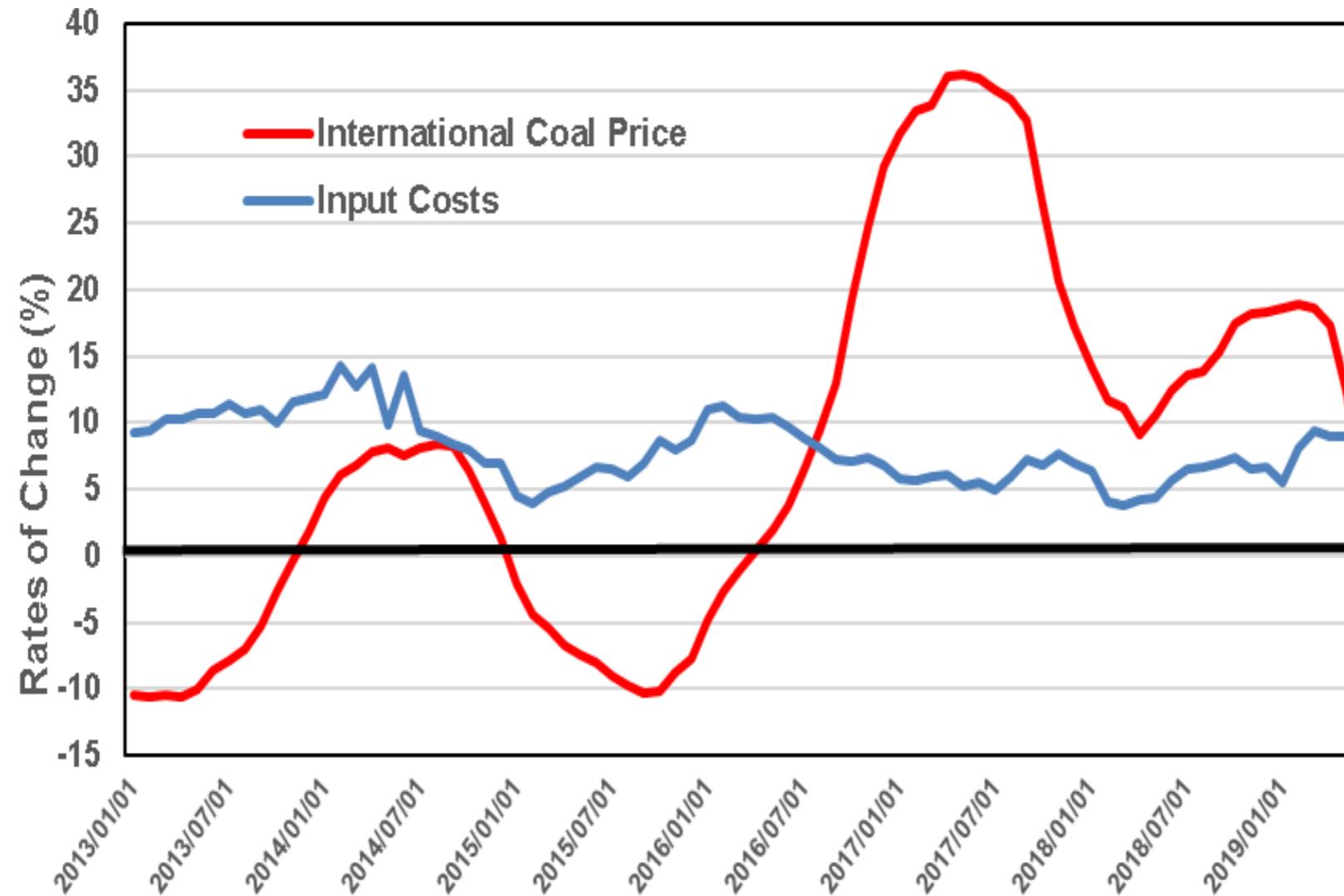
Sources: DMR, Eskom, World Bank, SARB, Minerals Council South Africa

Coal production response to international prices



Sources: World Bank, SA Reserve Bank, Statistics South Africa, Minerals Council South Africa

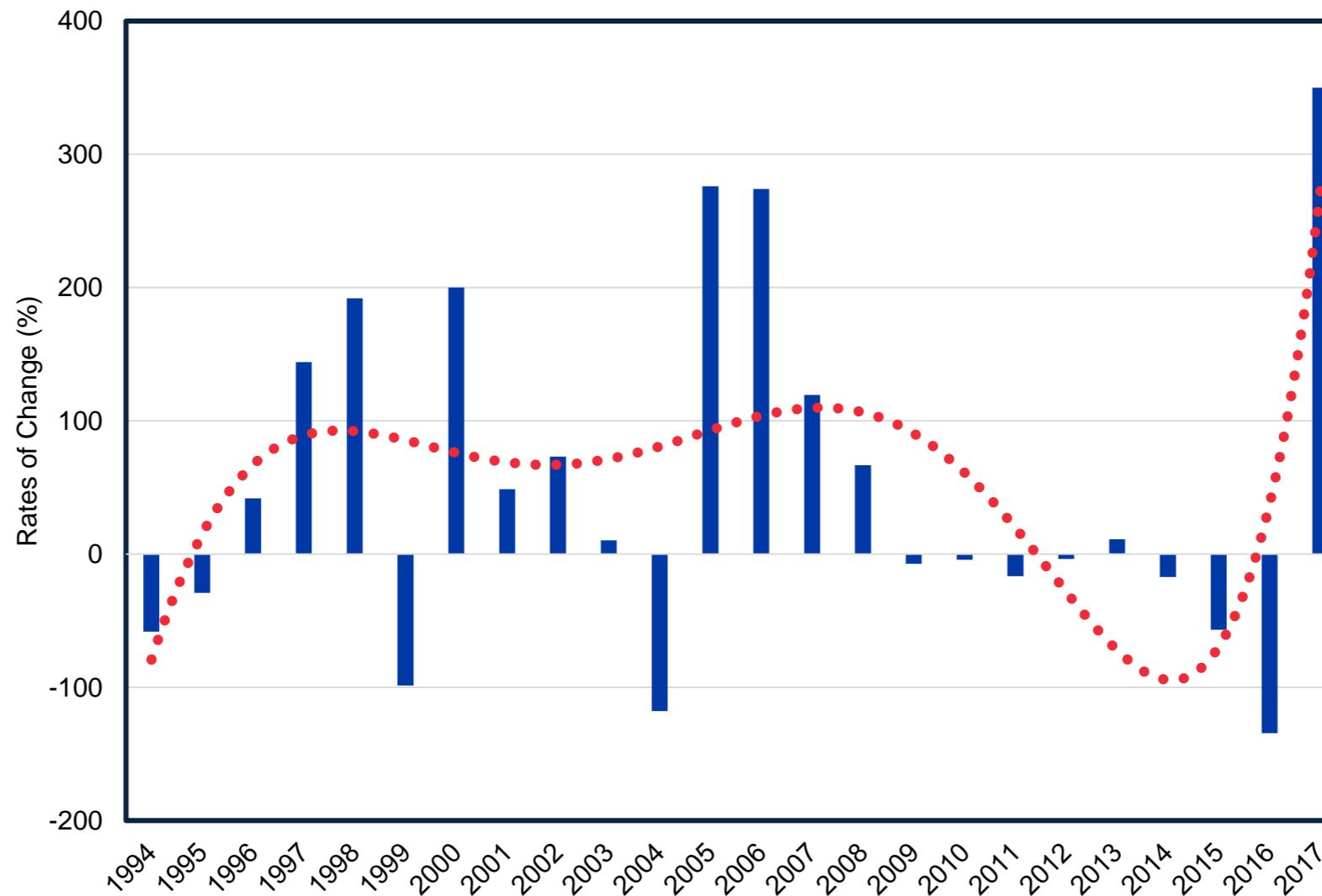
International coal price and cost changes



Source: World Bank, Stats SA, SA Reserve Bank, Minerals Council South Africa

South African coal mining net fixed investment

Post the global financial crisis



Sources: Statistics SA, Quantec, Minerals Council South Africa

Where is it all going: the future

Potential for coal mining to grow

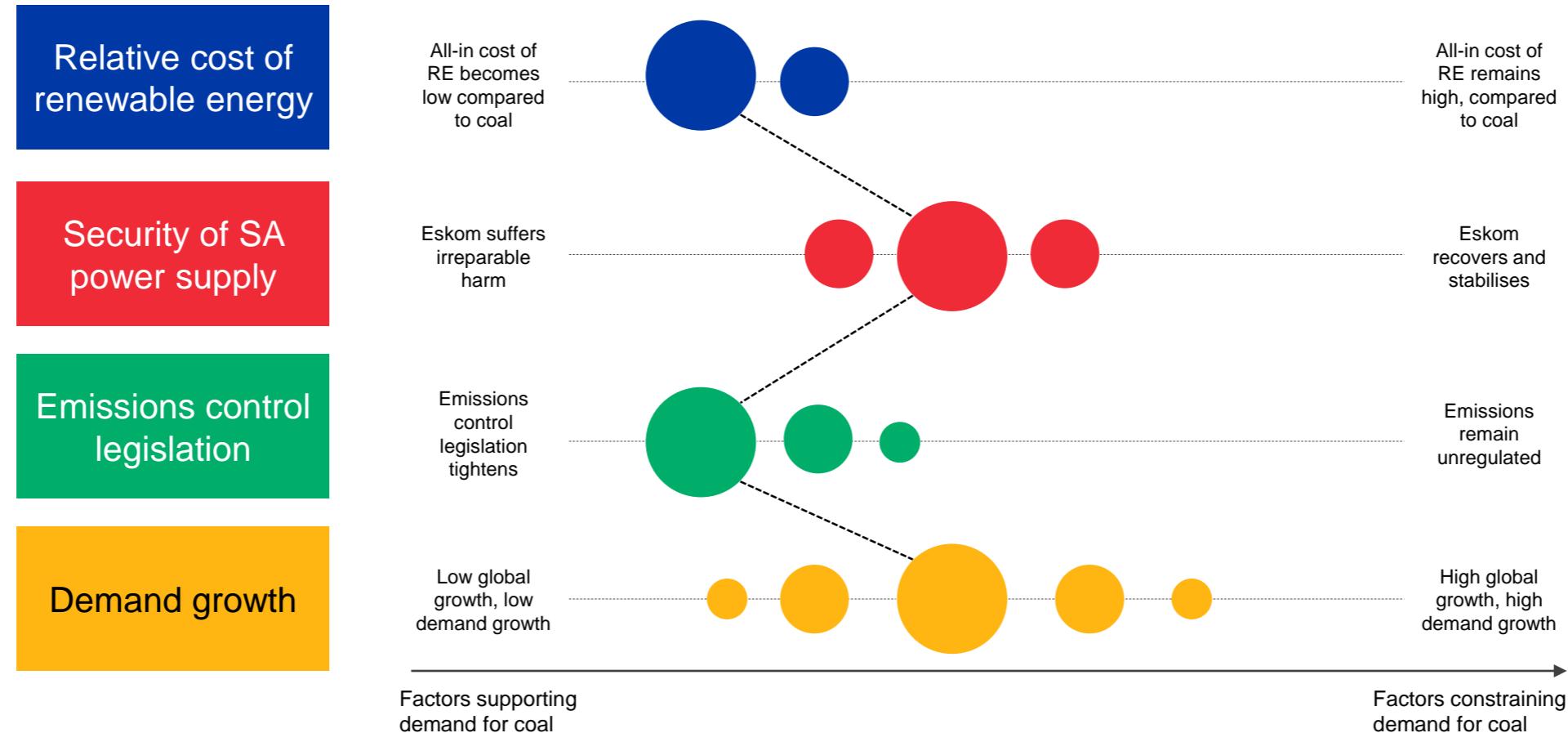
Exports

- 110 million tonnes of exports (versus 75Mt now), equals an extra 35 million tonnes which has the potential to:
 - increase employment by 11,600 people, and
 - investment by more than 10% (GFCF at R18 billion; 2017) to an estimated R20 billion per annum

Domestic demand

- Eskom buys 120Mt of coal annually
 - Latest Integrated Resource Plan (IRP) estimates coal consumption by Eskom to rise from 120 million tonnes (2017) to 139 million tonnes by 2023 and then decline to the current level by 2033, and then decline further to 90Mt by 2050
 - Potential for job creation due to domestic demand is around 6,500 people, accompanied by additional investment of R1.3 billion. Taking in consideration the declining life of several coal mines, reflected in the Minerals Council's study, several coal mines will have to be replaced which indicated that R20 billion investment is needed to keep supplying Eskom with coal

The various scenarios imply different likelihoods for each factor over the medium term (3-10 years)



Source: Minerals Council South Africa

The analysis showed strong convergence regarding future coal scenarios

	IRP 2018	Minerals Council South Africa	BCG	IEA	Academics
Global energy mix outcomes	No comment	Multiple scenarios, dependent on global socio-political change	No comment	Renewables dominate power generation globally, speed variable	Global shift to renewables, regional differences, speed of adoption varies
South Africa energy mix outcomes	Shift towards renewable energy mix	Shift to renewables dependent on innovation in RE and clean coal	Dépendent on changes in infrastructure (rail, port)	No comment	Global RE pricing differential drives further shift to RE
South African coal production outcomes	Different scenarios, including both increasing and decreasing demand	Scenarios including increases and decreases in local and export demand	Increases dependent on infrastructure decisions	Export growth likely declines as global coal demand falls	Fall in demand for coal, both locally and internationally
Employment and growth consequences	Fall in coal employment, decrease in electricity price	Different scenarios provide different outcomes; jobs shed without interventions	Increase in coal employment, decrease in electricity price	No comment	Variable, depends on de-carbonisation strategy

Source: Minerals Council South Africa

Prospects: IRP

- Short term: IRP will result in lower investment
- Long term: Decline in investment; job losses; decline of Eskom as anchor domestic customer

Coal industry employment as per IRP 1	Coal consumed by Eskom (Mt)	Jobs in the mining sector as a result of coal power	Direct Eskom employment in the electricity industry as a result of coal	Total coal mining sector and Eskom	Eskom installed coal capacity	Electricity sent out/generated (TWh)
2015 (actual)	119	37,318	43,771	81,089	37,754	204
2017 (actual)	115	37,834	42,300	80,134	37,868	202
2030	116	34,162	42,667	76,829	33,847	205
2040	61	20,067	22,436	42,503	17,847	108
2050	38	12,500	13,976	26,476	11,147	67

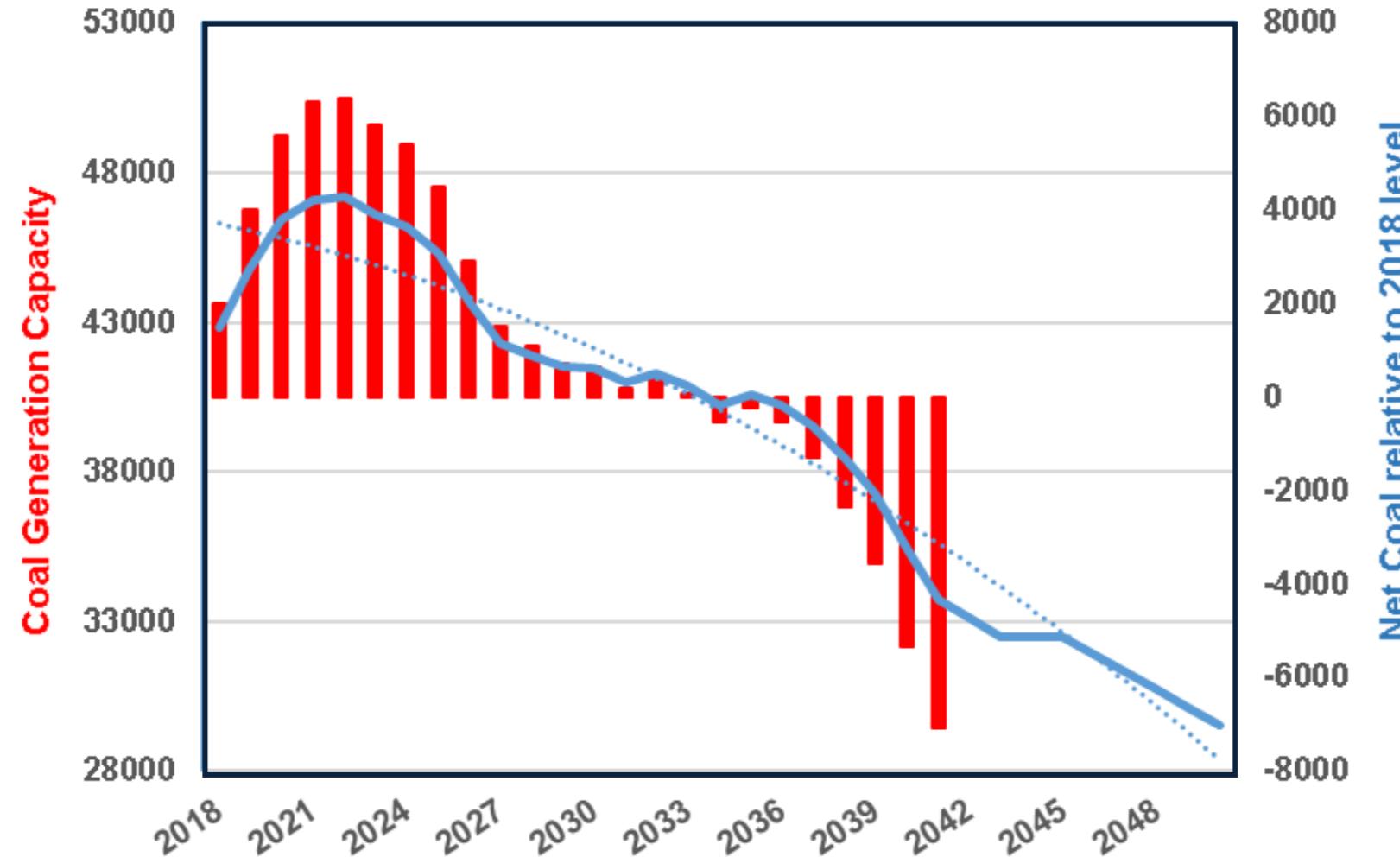
Problems with the draft IRP 2018:

1. Did not include clean coal technologies
2. “Least cost” was on the basis of overnight costs to the exclusion of levelised cost of electricity (LCOE)

Source: Minerals Councils South Africa, Eskom, and Department of Energy (Draft IRP2018)

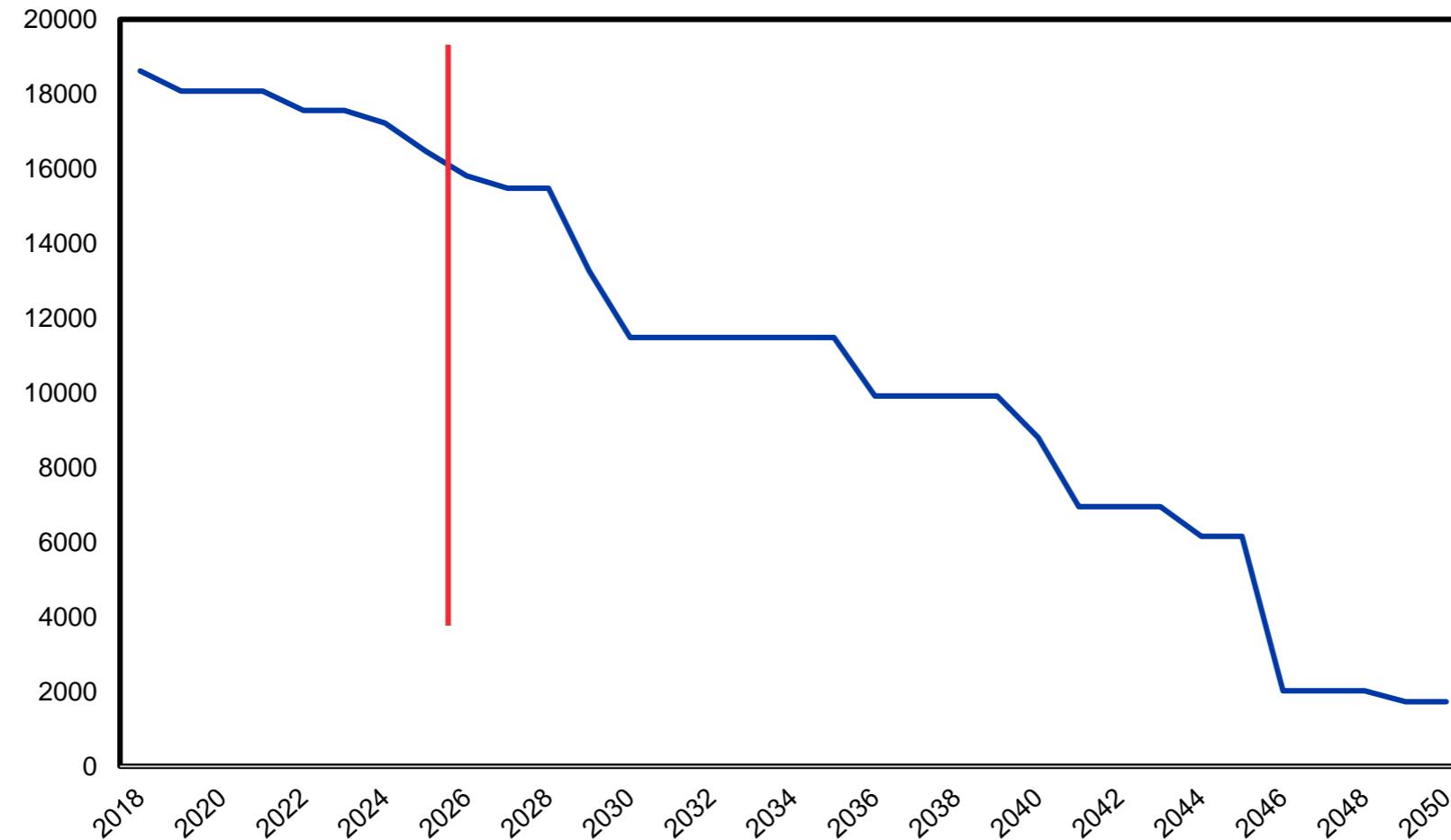
Initial analysis

IRP (draft) coal generation capacity



Source: Minerals Council South Africa, IRP 2018

Potential job losses in coal operations



Rate of decline of employment:

38% in 12 years (2018 - 2030)

90% in 32 years (2018 – 2050)

2018-2030:

Average of **595** workers exiting
employment per year

*Job losses projections extrapolated from amount of employees per mine at time of SLP publication and estimated year of closure per mine. Factors such as retrenchment and redeployment plans, new mines opening, among others will affect these.

collaboration

Thank you

<http://www.coalminingmatters.co.za>

T +27 11 498 7100 E info@mineralscouncil.org.za W www.mineralscouncil.org.za
5 Hollard Street, Johannesburg, 2001, PO Box 61809, Marshalltown 2107

