The state of coal mining in South Africa

Coal Industry Day | Henk Langenhoven | 24 July 2019
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This is coal mining 2018

Coal production and employment: 2008 – 2018

- **R24.7 BILLION** employee earnings 10%
- **86,919** Direct employees 5.3%
- **R1.637 BILLION** royalties paid 49%

**Production**
- 252.6 MILLION TONNES 0.16%

**Total sales**
- R139.4 BILLION 7%

**Value of percentage exported**
- 49%

Source: DMR, Minerals Council South Africa
Coal sector components: 2018

INPUTS  
R57 billion

DOMESTIC SUPPLY  
R 51 billion

IMPORTS  
R 6 billion

VALUE ADDED  
R82.4 billion

Labour:  
R 25.3 billion

Net surplus:  
R 37 billion

Fixed capital:  
R 16.3 billion

Taxes:  
R 3.87 billion

OUTPUTS  
R134.3 billion

Exports  
R 68.3 billion

DOMESTIC PRODUCT  
R 71 billion

DOMESTIC SUPPLY  
R 51 billion

INPUTS  
R57 billion

IMPORTS  
R 6 billion

OUTPUTS  
R134.3 billion

Exports  
R 68.3 billion

DOMESTIC PRODUCT  
R 71 billion
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)

Factors supporting demand for coal

- Security of SA power supply
- Emissions control legislation
- Demand growth
- Relative cost of renewable energy

Factors constraining demand for coal

- Low global growth, low demand growth
- High global growth, high demand growth

Source: Minerals Council South Africa
The analysis showed strong convergence regarding future coal scenarios

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<th>Minerals Council South Africa</th>
<th>BCG</th>
<th>IEA</th>
<th>Academics</th>
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<td>Global energy mix outcomes</td>
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<td>Multiple scenarios, dependent on global socio-political change</td>
<td>No comment</td>
<td>Renewables dominate power generation globally, speed variable</td>
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<td>South Africa energy mix outcomes</td>
<td>Shift towards renewable energy mix</td>
<td>Shift to renewables dependent on innovation in RE and clean coal</td>
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<td>South African coal production outcomes</td>
<td>Different scenarios, including both increasing and decreasing demand</td>
<td>Scenarios including increases and decreases in local and export demand</td>
<td>Increases dependent on infrastructure decisions</td>
<td>Export growth likely declines as global coal demand falls</td>
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<td>Employment and growth consequences</td>
<td>Fall in coal employment, decrease in electricity price</td>
<td>Different scenarios provide different outcomes; jobs shed without interventions</td>
<td>Increase in coal employment, decrease in electricity price</td>
<td>No comment</td>
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</table>

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

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

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.*
Thank you

http://www.coalminingmatters.co.za