

Commodity outlook: coal mines to keep lights on



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Lack of timeous investment in a number of key cost-plus coal producers in the Mpumalanga province in South Africa is one of Eskom's main challenges in securing coal supply for its power stations.

The situation is exacerbated by steadily falling quality of the country's coal output.

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At a media briefing in Johannesburg in November 2018, Eskom CEO Phakamani Hadebe acknowledged that Eskom's lack of investment in the 'cost-plus' coal mines had led to a decrease in supply from these sources of about six million tonnes.

"We realise that we need to engage with coal mining companies differently," said Hadebe, and explained that Eskom was rebuilding relationships with certain mining companies and looking for new ways of negotiating affordable coal supply.

He noted that "to some mining companies we need to apologise because some of the decisions we have made spoiled the relationship" – and that some of those companies were "coming back and even reviewing their own prices, because

at the end of the day we are all South Africans and what is good for Eskom is good for South Africa.”

In seeking new supply, Eskom was also now struggling to compete with the global market, said Hadebe; while international prices at the time of his presentation were around US\$110 a tonne – over R1,500 a tonne (at R14 to the US dollar) – Eskom was trying to negotiate contracts at R350 to R400 a tonne.

The need for new supply

I agree that urgent investment is required in the large cost-plus coal mines contracted to Eskom – where the bulk of the utility’s power station supply has always been sourced.

Some of these mines are running out of coal in their current mining areas, and need significant capital to open up new blocks and develop them for supply to Eskom.

These big players have been unable to develop because they have not received the capital injections they need according to the terms of their cost-plus contracts with Eskom.

Time is also not on our side, as it can take two to three years to develop a new block for mining, and Eskom needs more coal now.

Quality is key

Coal quality has been declining in the Witbank and Highveld coalfields, as most of the high quality product has been extracted.

Most coal in the region has historically come from the Number 2 Seam, measuring 6-7 metres thick with particularly good quality in the middle of the seam.

The underground mining of 2 Seam focused on the better quality, middle section of the seam.

While there are valuable pillars that are now being mined by opencast methods, there is inevitably much more dilution by lower quality coal in the roof and floor of these old mines, as well as higher levels of contamination from non-coal material – that bring down the average quality.

The reduced quality of 2 Seam coal has turned miners’ attention towards 4 Seam deposits, especially 4 Lower.

The coal deposits of new mining areas like the Waterberg will be technically challenging to mine, as they tended to comprise multi-seam configurations with different coal types in the upper and lower portions.

They also contain high ash content – as much as 65% in the upper portion – and would generate large volumes of discard. There was also a high potential for spontaneous combustion in the discard.

The need for increased capital expenditure at cost-plus mines did not negate the contribution of the junior mining sector in coal supply to Eskom.

There has emerged an important stratum of smaller coal producers who are bringing to account the shallow deposits which require a different economy of scale to be mined viably.

While they do not have the deep pockets of the larger groups, they play an important role in coal supply.

In addition to our work with the majors, we as SRK work closely with a number of smaller operators to help ensure optimal planning, operation and compliance.

We have expertise in all aspects of coal assessment, from the early stages of coal exploration, through resource evaluation and mine design to mine closure.

The investment aspect

Apart from its impact on the reliability of electricity generation, the lack of mine investment had already cost a considerable number of jobs at cost-plus mines.

There are also signals that government's energy plans for the future will rely less on coal, potentially leading to more job losses in the sector.

Coal generated R129 billion in sales in 2017 – about 28% of South Africa's total mineral sales – and directly employed over 82 000 people, whose earnings amounted to some R22 billion.

Apart from being the third-largest employer in the mining sector, it also created another 170 000 indirect jobs.

The government's latest draft Integrated Resource Plan (IRP) envisaged only 45% of the nation's supply of energy coming from coal – down from 48% in the 2010 draft of the IRP.

In terms of the electricity coming from coal-fired power stations, this planned reduction represents about 4 000 MW of energy that will in future not require being generated by coal.

This amount is equivalent to the closing of a large power station like Kendal – the last big power station built before work began on Medupi and Kusile.

Impact on employment

The amount of coal required to produce 4 000 MW of energy is roughly 14 million tonnes each year on average, which would in future then not be required by South Africa's energy generating facilities.

If the industry does not need this tonnage, the impact on employment is about 14 000 direct and indirect jobs – which would previously have been required but which would now be shed over time.

Apart from the employees themselves and their dependents, the loss of these jobs would also likely affect the total number of indirect jobs created by the coal sector.

In addition Camden, Komati and Grootvlei power stations would probably be the first to be closed, due to their age and the high production costs.

The rural location of many of these older plants, however, means that they are among the few sources of employment in these areas – a factor likely to aggravate the local socio-economic impact of the job losses.

Accessing remnant deposits in the Witbank, Highveld and Ermelo coalfields by the smaller operators could help offset possible job losses.

Environmental considerations

As a counterpoint, the positive environmental impacts to be achieved by the IRP's proposed movement towards greater usage of natural gas – which would help bring South Africa more in line with the Paris Accord.

This is a constructive direction, although as a country we have little of our own gas to exploit at this stage.

Our imports from Mozambique could be increased, and there is scope for importing liquid natural gas (LNG) – which would require a special port, extensive technological infrastructure and distribution pipelines.

There were also prospects for extracting gas in the form of coal-bed methane – also referred to as coal seam gas – from the Waterberg coalfields in Limpopo province.

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She has over 34 years' experience, ranging from conducting Greenfield exploration projects to Feasibility and Due Diligence studies and Competent Persons Reports on operating collieries.

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