How much does Eskom need to fail before mines are forced to close?

By Katherine Brown

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If the Eskom crisis isn't resolved soon, the national unemployment crisis will become even more dire because of impending mass retrenchment in the mining industry. Mines are already vulnerable in an economy which has barely emerged from recession, with high production costs, rolling blackouts, and now escalating electricity tariffs.

Image source: Getty/Gallo

South African mining is the third largest consumer of electricity (after municipalities and industry), using 14.2% of the total produced in 2017/18. Within the industry, gold mining uses the most electricity at 47% of the total, followed by platinum at 33%, with other parts of the industry using the remaining 20%. Eskom and the mining industry have a co-dependent relationship, as Eskom relies on the mining industry for coal to produce 91.1% of its output.

Historically, Eskom was a relatively successful state-owned company, as it had access to cheap coal and enjoyed low borrowing costs from government – a benefit of being a state-owned enterprise. Stations were built near coal mines, so that coal could be delivered on demand – sometimes by conveyor belt. Koeberg's additional nuclear electricity production supplemented the coal-fuelled power from 1984. South African electricity tariffs were low, notably lower than world prices. At the dawn of democracy, this was seen as a major advantage for the country.

This is no longer the case, and the state-owned utility has developed a myriad of issues, culminating in its financial and operational crisis.

The rotten state of Eskom

Eskom's current crisis is the product of fundamental inefficiency, apparent in the extent of corruption, the bloated wage bill, overstaffing, underproduction, lack of foresight (illustrated in the lack of new stations being built to meet increasing demand), and rising debt – which is currently more than double its revenue. Additionally, BEE imperatives meant that Eskom sourced its coal according to BEE compliance credentials over the quality and price of coal, leading to costlier coal purchases. This, along with several corrupt coal deals (as reported by the Special Investigating Unit report of 2017, cited by *City Press* in a recent article), contributed to the first 'self-inflicted' loadshedding blackouts of 2008, which forced several coal-fired stations to shut down. This in turn stopped gold, platinum and other mines from operating, causing severe and long-lasting damage to the South African economy.

Eskom's (power) failures are interrupting mining operations, with dire consequences. Mining and Eskom's co-dependency threatens them both: Eskom needs coal to function, but coal can't be mined without electricity. South Africa's power demand is already met by coal-produced energy with contributions from nuclear and renewable sources, so perhaps all that is needed is to alter this mix to create more stability for mining. The most viable alternative to coal is nuclear energy, which currently makes up only 6.4% of our total energy supply.

Powering the mines

Despite recent reports of safety concerns at Koeberg, nuclear energy is safe, clean, affordable and reliable – which is more than can be said for other renewable sources, or coal for that matter. For example, expensive lithium batteries are required to store solar energy, and these will have to be disposed of eventually, with inevitable environmental implications. One option is for mines to use nuclear energy exclusively, ensuring an uninterrupted power supply. Another option is for South Africa to improve the efficiency of other renewable energy sources, including installing costly batteries and other infrastructure to supplement the coal-fuelled power, allowing power-intensive mining operations to continue.

The motivations for renewable energy have merit, but renewable and nuclear energy constitute only 8.9% of the total electricity supply. Currently, nuclear and renewable energy sources alone are insufficient to fuel mining (or much else, for that matter), though they are laudable and viable goals for the future. In the meantime, Eskom's proposed solutions pose problems for mining.

The recently announced Eskom tariff increases (13.8% for this year, 8.1% for 2020, and 5.2% for 2021) will likely put over 90 000 jobs in jeopardy in all mining sectors and force up to 40% of mining companies to shut down. The tariff increases are intended to compensate for Eskom's vast financial shortfalls and have been met with much resistance. Mining utility costs are low, not because of favourable rates, but because of decreased production rates, especially in the energy-intensive sectors of gold and platinum, according to PwC.

Job losses

The Minerals Council South Africa (MCSA) estimates that over 50,000 jobs have already been lost in the mining sector since 2007, the start of the electricity crisis. Unfortunately, mining is one of the few opportunities for low-skilled job-seeking South Africans who, amid our unemployment crisis, are even more desperate for work. Eskom's failure will thus have far-reaching consequences, especially for this demographic. Each miner supports between five and 10 dependents, and creates two jobs elsewhere, according to the MCSA.

Coal is a significant sector of the mining industry, as the main supplier of fuel to Eskom as well as export markets. In 2018, coal represented the largest share of the mining industry, making 29% of total South African mining revenue for the year. The significance of this field also extends to its workers. The MCSA estimates that the coal industry employed 86,919 people in 2018 or 19% of all employment (over 450,000 people) in the mining sector. Coal employees make up the third largest group in the mining industry, after gold and platinum group metals, with yearly earnings of around R22bn. Labour costs are the highest cost in the mining industry, making up 46% of total operating expenses in 2018.

The industry's financial gains add marked value to South Africa and its people. For example, the coal industry prioritises local goods and services, which contributes to job creation and maintenance in other industries as well. According to PWC's value-added statements, (which quantify the monetary value created by various stakeholders) employees in turn add significant value to the industry, at 47% of total value added for 2018. Should load shedding persist, the potential material losses will be devastating, to Eskom, to the mining industry, and to all who have made mining their livelihood.

Electricity costs

Already, the industry has suffered, as investment in the coal sector has decreased by 10% per year, from R7.3bn in 2009 to R3.8bn in 2017. The mining sector constituted about 6.8% of the total South African GDP in that year, down from the 7% share of GDP in 2016. This is the case even though coal's contribution rose from -4.3% of total GDP in 2016 to 4.6% in 2017, or R312bn.

The mining industry's electricity costs have increased by at least 12.5% on average since 2010, while commodity prices for gold and platinum increased by only 10.2%, which puts mining companies in the increasingly precarious predicament with an imbalance of production costs and income. Additionally, mining output is dwindling while worker wage demands grow, which has seen the mining industry shrink in recent years. South Africa's gold output dropped 19% in September of last year, making it the biggest decline in almost four years, as producers struggle to cover costs.

The Eskom crisis will inevitably worsen the unemployment crisis, especially for miners. Given all these declines in the industry, it is uncertain whether mining, and miners, will weather the storm of the Eskom crisis.

ABOUT THE AUTHOR

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