Published by:
Creamer Media's
RESEARCH CHANNEL
AFRICA

REAL ECONOMY INSIGHT
COAL

JULY **2019**

CREAMER MEDIA'S
ENGINEERING NEWS

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While thermal coal's share of the global energy mix is forecast to decline from 27% in 2017 to 25% in 2023 as more stringent air-quality policies are introduced, coal divestment campaigns gather momentum and renewables costs continue to fall, the International Energy Agency (IEA) expects power station demand for the fossil fuel to remain stable over the outlook period.

This upbeat forecast is based on the expectation that the envisaged environment-related demand reduction, projected to be most pronounced in Europe and North America, will be more than offset by strong growth in Asia, the agency states in its 'Coal 2018' report.

India is expected to post the greatest demand increase in Asia, but a deceleration in the growth rate is predicted, owing to a large-scale expansion of the country's renewables sector and increased use of supercritical technology in new power stations. Elsewhere on the continent, significant demand growth is predicted in Indonesia, Vietnam, the Philippines, Malaysia and Pakistan. The IEA's projection for China, which accounts for nearly 50% of thermal coal global consumption, is for a 3% demand decline in the five years to 2023 as clean-air measures are implemented.

The World Coal Association (WCA) is also upbeat about thermal coal's prospects, pointing out in March 2019 that the world's current coal-fired electricity generation capacity of 2 000 GW – which requires six-billion tonnes of coal a year – represents an increase of 62% since 2010, and that more than 300 GW is under construction in Asia alone.

Given the availability of technology that reduces harmful-gas emissions from coal-fired power stations, the WCA believes coal will continue to have a role in a carbon-constrained world. One such technology is carbon capture, use and storage (CCUS), which the association says could be retrofitted to some power stations, with more than 300 GW of the existing generation capacity in China alone reportedly meeting the criteria for CCUS retrofit.

However, the thermal coal sector suffered a blow in March 2019, when the Japanese government announced that it would no longer approve any new coal-fired power stations. This coincided with major Japanese companies announcing their intention to move away from coal, and South Korea increasing taxes on thermal coal by 27%.

While the thermal coal sector is under pressure, largely because of the commodity's environmental impact, the coking coal market is booming, buoyed by strong demand and barely growing supply, which have resulted in prices doubling to more than $210/t since 2010. Consultancy Wood Mackenzie expects the 2019 average price to be upwards of $180/t, while its counterpart, Fitch Solutions, has forecast $195/t and financial services firm Credit Suisse $203/t.

There are concerns, however, that the high prices of coking coal may prompt significant production capacity expansion, boosting output as consumption slows, thus exerting downward pressure on prices.

Meanwhile, owing to slackening demand in key markets, economic analysts FocusEconomics expects thermal coal prices to average $93.80/t in 2019 – 1.50% lower than the economics firm's previous forecast for the year – and to decline further to $87.20/t in 2020. National Australia Bank has also revised its 2019 price forecast downwards – from $95/t to $88/t. Credit Suisse forecasts $85/t in 2019 and $80/t in each of the next two years.

SOUTH AFRICAN COAL MARKET

South Africa's estimated coal endowment of 30-billion tonnes, valued at R6-trillion, equates to 3.50% of the global total. Coal mining in the country primarily takes place in the fast-depleting Mpumalanga coalfields – which account for 83% of total production – with smaller quantities mined in the burgeoning Waterberg region of Limpopo, as well as in KwaZulu-Natal and the Free State.

South Africa's coal deposits are generally shallow, largely unfaulted and slightly inclined, which lends them to opencast and shallow underground mining, with a high degree of mechanisation.

COAL

Coal is the largest revenue generator in the South African mining industry, earning R139.40-billion in sales in 2018, up 7% on the previous year. Forty-nine per cent of this figure comprised export receipts. The sector, which employed 86 919 people in 2018 – 5.30% more than in 2017 – also contributed R168-billion to the fiscus in the form of royalties and paid R24.70-billion in wages and salaries, according to industry body Minerals Council South Africa.

The coal mining sector faces several challenges, including poor policy cohesion, exemplified by State-owned electricity utility Eskom's insistence on procuring the fossil fuel from suppliers with a 51% broad-based black economic-empowerment level, while the Mining Charter stipulates 30%. Coal miners also have to contend with cumbersome application processes for environmental, prospecting and mining right licences; constraints on the coal export channel, which extends from the Waterberg to the Richards Bay Coal Terminal (RBCT), on the KwaZulu-Natal coast; near-mine communities demanding jobs and tenders; and challenges in municipalities where mining operations are located.

Also of concern is the Carbon Tax Act, which took effect on June 1, 2019, and aims to increase the cost of carbon-intensive goods and services through the appropriate pricing of carbon, thus promoting noncarbon alternatives.

Meanwhile, South African coal mines produced 252.60-million tonnes in 2018, marginally higher year-on-year. Until the disposal in 2018 of its Eskom-tied mines and its 73% interest in Anglo American Inyosi – owner of the Mpumalanga-based New Largo thermal coal product and disused Old New Largo colliery – Anglo American Coal South Africa (AACSA) was the largest coal producer in the country. AACSA and Seriti Resources, the startup that acquired its former coal assets, together with Exxaro, South32, Glencore and Sasol Mining, produce 80% of the country's coal, with the balance accounted for by 50 to 60 junior miners, some of which have entered the sector in recent years, following Eskom's implementation of a procurement policy that favours suppliers with a black ownership of 50% plus one share.

Of the 252.60-million tonnes produced in South Africa in 2018, 73.47-million tonnes – 4.10% less than in 2017 – was exported, with the balance sold on the domestic market, where Eskom is the biggest consumer, accounting for 53% of demand. The main export destination in 2018 was India, which received 35.29-million tonnes, followed by Pakistan (9.37-million tonnes) and South Korea (6.73-million tonnes). The Netherlands received 3.14-million tonnes and Spain 1.38-million tonnes, while Egypt was the top destination in Africa, receiving 1.33-million tonnes.

The RBCT expects to ship 77-million tonnes in 2019, higher than 2017's all-time high of 76.47-million tonnes. However, Minerals Council South Africa calculates that, if gross fixed capital formation in the sector – which totalled R18-billion in 2017 – increased by 10% a year, coal exports could increase to about 110-million tonnes a year, creating an additional 11 600 jobs.

CORPORATE ACTIVITY

Anglo American has not been the only mining major to have divested, or announced plans to divest, from some of its coal assets in South Africa in the past two years.

South32's South African Energy Coal (SAEC), which produces 28-million tonnes a year – half of which it delivers to Eskom – has been up for sale since 2018. While details are sparse about progress on the sale, CEO Graham Kerr told an interviewer in March 2019 that a shortlist was being prepared from more than 50 bidders. Mining news website miningmx reported during the same month that the winning bidder would have to be anchored by a black-owned company with a balance sheet that is capable of funding the cost of resource renewal and production growth, as well as rehabilitation charges. SAEC boasts 4.50-million tonnes of *in situ* resources and a 21% entitlement at the RBCT.

Seriti is reportedly one of the entities interested in acquiring SAEC, said to be worth about $800-million, along with Phembani Group, owned by telecommunications giant MTN's former chairperson and CEO, Phuthuma Nhleko, and nonprofit group Mining Forum of South Africa. Exxaro executives would neither deny nor confirm the company's interest in SAEC when they presented 2018 financial-year results in March 2019. However, they confirmed that Exxaro had decided against preparing a bid for another coal miner that is up for sale – Optimum Colliery Holdings –

explaining that, as the transaction was designed as a package deal, it would be value destructive for the company.

Seriti has, however, stated that it is interested in acquiring Optimum Colliery Holdings, owned by the controversial Gupta family's Tegeta Exploration & Resources, which is in business rescue and whose Optimum coal mine is contracted to supply Eskom's Hendrina power station, in Mpumalanga. Should it be selected to buy Optimum, Seriti would be entitled to the company's 7.50% stake in the RBCT, which, based on the terminal's yearly capacity of 81-million tonnes, equates to just over six-million tonnes a year.

In January 2019, a consortium that includes State-owned African Exploration & Mining Finance Corporation (AEMFC) announced that it was also vying for the Optimum mine, with the entity stating that it envisaged a public–private partnership model where it would own the mine and an established privately owned mining company operating it. AEMFC, which owns the Vlakfontein colliery, in Mpumalanga, stated that it had the financial wherewithal to bid for the Optimum mine, which would include providing a R250-million guarantee.

ELECTRICITY GENERATION

Eskom consumes more than half the coal mined in South Africa. During the 2017/18 financial year, its 16 coal-fired power stations burned 115.49-million tonnes of the fossil fuel, compared with 113.74-million tonnes in the previous year.

The utility procures more than half its coal under a model whereby it provides mine owners with capital to develop and expand their mines, with the output supplied to the utility at cost plus a small margin. However, it has failed to commit sufficient capital for this purpose over the past few years and announced in 2015 that it intended to withdraw from the cost-plus mines, a decision that was reversed in May 2018 by CEO Phakamani Hadebe, who announced that he would be leaving the parastatal at the end of July 2019.

The lack of sufficient investment in new capacity at the cost-plus mines, coupled with factors that include a decline in supplies from Tegeta, has resulted in a precipitous decline in coal stockpiles at Eskom's power stations since October 2017, when available supplies were above 40 days.

To help remedy the situation, Hadebe told *Engineering News* in November 2018 that 27 new coal supply contracts had been concluded since January 2018 and that more contracts were due to be signed. The new contracts, he added, were in line with the provisions of the Preferential Procurement Policy Framework Act and the Public Finance Management Act, which meant that the utility was not insisting that suppliers be majority owned by black shareholders. He explained that more than 70% of the contracts that had been concluded by that time were signed with companies whose black shareholding was below 50%.

In the longer term, Eskom intends to boost its coal supply by extending cost-plus contracts, investing in cost-plus mines, extending existing fixed-price contracts and conducting open tenders to source uncontracted coal for the life of power stations.

While coal deliveries to Eskom power stations totalled 115.49-million tonnes in 2018, the latest draft of the Department of Energy's Integrated Resource Plan envisages an increase to 139-million tonnes a year by 2023, followed by a decline to current levels ten years later, before contracting further to 90-million tonnes a year by 2020. The Minerals Council calculates that the expected increase in demand from Eskom in the coming years will require a R1.30-billion investment in new mines, which will result in the creation of an estimated 6 500 additional jobs. As some of the existing coal mines are nearly depleted, several new operations will need to be developed, at a cost of about R20-billion, to meet Eskom's demand.

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