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# SOUTH AFRICA ENERGY ROUNDUP

MARCH **2019**

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ENGINEERING NEWS

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Creamer Media's South Africa Energy Roundup – March 2019, covering activities across South Africa for February 2019

# ENERGY PLANNING

## IRP to be finalised in March

Energy Minister Jeff Radebe has listed the finalisation of the Integrated Resource Plan (IRP) for electricity as South Africa's main energy priority and has indicated that the policy should be approved in March. The draft policy-adjusted plan includes the following new additional capacity by 2030: 1 000 MW of coal, 2 500 MW of hydro, 5 670 MW of solar photovoltaic (PV), 8 100 MW of wind and 8 100 MW of gas. Should the new capacity be introduced as envisaged, by 2030 South Africa's electricity will comprise: 34 000 MW of coal (46%); 1 860 MW of nuclear (2.50%); 4 696 MW of hydro (6%); 2 912 MW of pumped-storage (4%); 7 958 MW of solar PV (10%); 11 442 MW of wind (15%); 11 930 MW of gas (16%); and 600 MW of concentrated solar power (1%).

# ESKOM GENERATION AND SALES

## Cabinet committee established to oversee Eskom running

President Cyril Ramaphosa has established a special Cabinet committee to deal with the State-owned power utility Eskom crisis and provide him with reports daily on the State of the power grid and "what actions need to be taken to ensure energy supply".

The task team will be led by Deputy President David Mabuza, and will include Public Enterprises Minister Pravin Gordhan, Energy Minister Jeff Radebe, Transport Minister Blade Nzimande, Police Minister Bheki Cele and State Security Minister Dipuo Letsatsi-Duba.

## South Africa infrastructure think-tank slams hiring of foreign engineers

The Infrastructure Research Development Centre is opposed to government's decision to bring in external engineers to investigate the crisis at State-owned power utility Eskom's power stations. Public Enterprises Minister Pravin Gordhan told Parliament in February that a panel of experts would be brought in to investigate what caused seven generating units to collapse earlier in that week. This led to countrywide rolling blackouts as Eskom started implementing rotational load-shedding. He said engineers from Italian energy company Enel would be brought in to help resolve Eskom's maintenance issues.

The power utility has suffered a brain drain owing to instability as experienced employees were pushed out.

## South32 expresses concern about Eskom's fragile state

Mining and metals company South32 says it is concerned about the challenges that have increasingly threatened the stability of power utility Eskom and that it needs to ensure the continuity of supply of its coal to Eskom in the long run. South32's South Africa Energy Coal company includes four mining operations, as well as three processing plants, producing energy coal for the domestic and export market. "Eskom is the single biggest risk to the South African economy," South32 COO Mike Fraser told the Investing in African Mining Indaba, in Cape Town, in February. Eskom's financial woes, which are set to hike electricity tariffs, were a challenge to energy intensive users. Fraser has cautioned against high tariff increases and wants Eskom to implement an industrial tariff to attract investment.

## Technical defects at Medupi and Kusile resulting in serious underperformance

State-owned power utility Eskom has said that technical defects at the new Medupi and Kusile coal-fired power stations, which are not only years behind schedule, but also hugely over budget, are resulting in a serious underperformance of the units that have entered into commercial operation. Officially Medupi, located in Limpopo, was expected to cost R145-billion to build and Kusile, located in Mpumalanga, R161-billion.

The projects are two-and-a-half times more expensive than what was initially budgeted and are well behind schedule, with the last Medupi unit expected in late 2019 or in early 2020 and the last Kusile unit by mid-2022. In a presentation delivered during the National Energy Regulator of South Africa public hearing in Soweto, in February, technology GM Dr Titus Mathe reported that the three Medupi units and the one Kusile unit currently in commercial operation had, for the financial year to date, experienced a total of 84 unit trips. Medupi unit trips rose from 20 during the 2018 financial year to 66 in the 2019 financial year, which runs to March 31. He also revealed that the average energy availability factor (EAF) for the Medupi units was below 70% between April and December last year, with Unit 6, which was the first unit to enter into commercial operation in 2015, having been shut for repairs for three months from the start of September until the end of November.

The immediate target is to return to an EAF of 70%, which is well below the 92% 'use requirement specification' target set for the units.

# ESKOM FINANCES AND CORPORATE

## Eskom gets R15bn loan from lending consortium

Struggling power utility Eskom has agreed a R15-billion loan facility with a consortium of local and international banks. This is an important step to close a funding gap before the end of March. The government-guaranteed facility will form part of the financing of Eskom's current capital expenditure programme.

## Eskom warns of large losses

State-owned power company Eskom is warning that its loss for 2018/19 will be worse, at R20-billion, than the R15-billion loss it had projected earlier and that it will be followed by a possible R19.7-billion loss in 2019/20 even if it receives large electricity tariff hikes. The deterioration has been attributed mainly to the additional costs that have arisen as a result of the underperformance of the utility's coal fleet, which had already resulted in a sustained period of rotational load-shedding towards the end of 2018. The fall in the coal fleet's energy availability factor has also led to Eskom becoming increasingly reliant on more expensive generation options, such as the diesel-fuelled open cycle gas turbines.

## Mboweni announces R23bn-a-year support for Eskom

Finance Minister Tito Mboweni has turned down a proposal for R100-billion of power utility Eskom's debt to be transferred across to the National Treasury, and has instead announced R23-billion a year in financial assistance for the debt-laden utility that is directly tied to a restructuring of the business. Over a three-year period, the assistance will amount to R69-billion, which is designed to help Eskom with its reconfiguration and pay off debt and "not to pay salaries". Beyond the medium term, the National Treasury indicates the size of support will depend on several factors, including economic growth, tariffs and the implementation of Eskom's strategy.

## President announces Eskom split

President Cyril Ramaphosa has confirmed that State-owned electricity producer Eskom will be split, under Eskom Holdings, into three separate entities – generation, transmission and distribution – to bring credibility to the turnaround of the utility and to position South Africa's power sector for the future. Eskom's new business model will be introduced immediately and should take into account the root causes of its current crisis and the profound international and local changes in the relative costs, and market penetration of energy resources, especially clean technologies. The split of the utility into three independent units will ensure that costs are contained and that each entity is given appropriate responsibility. This will enable Eskom to raise funding for its various operations more "easily from funders and the market".

The first step in the separation process will be to transfer a portion of Eskom's assets to a new transmission company, which will invite the participation of strategic equity partners that will provide capital for the business and strengthen oversight. Finance Minister Tito Mboweni argues that the inclusion of partners at what he terms the national grid company does not equate to privatisation. In electricity, Mboweni says there is a need for competition in the generation sector, which has already begun with the inclusion, in recent years, of independent power producers.

## Unions oppose Eskom restructuring

President Cyril Ramaphosa has promised that there will be "meaningful consultation and dialogue" with all key stakeholders as government moves to unbundle State-owned power utility Eskom. The promise comes amid opposition to any Eskom restructuring from various labour unions, including those falling under the umbrella of the Congress of South African Trade Unions, which is in an alliance with the governing African National Congress. There is particular apprehension that the restructuring could result in job losses and there is also a strong suspicion that it could become the precursor to privatisation.

However, business is supportive of reform, having warned on several occasions that Eskom's current model is no longer fit for purpose.

# RENEWABLE ENERGY

## DBSA wins global award for renewable-energy project financing

The Development Bank of Southern Africa (DBSA) has won the African Renewable Energy Programme Award. The award was presented to the DBSA, in London, in the UK, by Project Finance International (PFI), an institution that organises the global awards. The achievement signifies the DBSA's growing involvement in energy project financing and raises the institution's profile among its peers in the industry. The PFI panel of judges says the DBSA beat other strong contenders primarily because of the successful financial closure and implementation of several projects it financed in Round Four of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). The DBSA provided project financing for more than 14 renewable-energy projects in Round Four of the REIPPPP, including the Sirius Solar and the Dyasons Klip 1 and Dyasons Klip 2 photovoltaic projects developed by Scatec Solar.

## Motsepe rejects Eskom conspiracy claims, but admits to perception problem

Black business luminary Patrice Motsepe has labelled as "ridiculous" a recurring allegation that African Rainbow Energy and Power (AREP) is part of an unscrupulous plan to collapse Eskom and supplant the State-owned power utility with independent power producers (IPPs), in which the business would have a major interest. Nevertheless, he has acknowledged that AREP has a perception problem, which will persist for as long as his brothers-in-law, Cyril Ramaphosa and Jeff Radebe, occupy the positions of President and Energy Minister respectively. AREP will not dispose of its renewables assets, or withdraw from recently awarded projects. Most of its future attention, however, will be directed to the development of a renewables portfolio in the rest of sub-Saharan Africa, which would be developed with support from a $100-million fund partly capitalised by African Rainbow Capital.

The company will also partner with private South African companies that intended pursuing own-generation projects to supply electricity to their mining or manufacturing operations. Meanwhile, CEO Brian Dames has highlighted AREP's relatively modest role in the renewables sector noting that, at R800-million, its total equity value represented less than 4% of the R20.6-billion achieved during the fourth bid window. It is also less than 10% of the black economic-empowerment equity value of R8.6-billion injected during the round.

## Radebe says South Africa has no intention of renegotiating renewables PPAs

Energy Minister Jeff Radebe says government has no intention of renegotiating the power purchase agreements (PPAs) for renewable-energy projects procured in 2011 and 2012, but has left the door open for a "refinancing" of the projects in the interest of lowering the cost of the plants to the consumer. The prospect of renegotiating the contracts had been raised by Public Enterprises Minister Pravin Gordhan during a recent Parliamentary portfolio committee meeting in Cape Town. Gordhan was quoted as saying that a renegotiation of the PPAs associated with the first two bid windows of the Renewable Energy Independent Power Producer Procurement Programme would "alleviate pressure on Eskom and the electricity tariff". However, Radebe has said that, while the tariffs bid during the first rounds are indeed high; there has been a steady decline in subsequent auctions. In addition, the PPA contracts have been signed after a "very fair, very competitive and very transparent" process.

## Statistics point to renewables playing a role in load-shedding mitigation

Newly released statistics on the performance of South Africa's small, but expanding, renewable-energy fleet point to a positive contribution from the country's wind and solar plants during those hours towards the end of 2018 when State-owned power utility Eskom resorted to load-shedding. Compiled by the Council for Scientific and Industrial Research (CSIR) Energy Centre, the statistics highlight a particularly strong correlation between the daily generation profile of the country's 1 479 MW solar photovoltaic (PV) fleet and the times of the day that load-shedding occurred in June, July, November and December 2018. In total, Eskom resorted to rotational power cuts on 12 days last year. Although still a small contributor to South Africa's overall production of electrical energy, the CSIR statistics show that the country's operational utility-scale wind, solar PV and concentrated solar power (CSP) plants helped mitigate the impact of the system's imbalances.

During 2018, only 100 MW of additional CSP capacity was added, increasing the capacity of South Africa's operational renewables fleet to 3 957 MW, comprising 2 078 MW of wind, 1 479 MW of solar PV and 400 MW of CSP. Lead author and senior engineer Joanne Calitz and principal engineer Jarrad Wright report that, by the end of 2018, the combined production of electricity from the wind, solar PV and CSP plants was 10.8 TWh, or 4.6% of South Africa's system load – notably higher than South Africa's imports of electricity. The fleet had a combined monthly production of between 742 GWh and 1 047 GWh, with the maximum daily total energy from solar PV, wind and CSP combined recorded at 49 GWh on October 21, or 8% of system load. The fleet's maximum instantaneous contribution was recorded at 13.1% between 14:00 and 15:00 on New Year's Day last year. Wright says the positive contribution of the renewables plants during periods of load-shedding relates to the fact that most of the rotational cuts were implemented in mid-morning and suspended in the evenings.

## Zondo Commission of Inquiry into State Capture

Power utility Eskom was in the spotlight at the Zondo Commission of Inquiry into State Capture at the end of February and early March, where more details emerged of the electricity provider's disregard of procurement processes and the sky-rocketing costs of its new power stations.

Glencore South Africa's former CEO Clinton Ephron has testified that former Eskom CEO Brian Molefe forced the Optimum coal mine out of business by simply refusing to negotiate a new coal supply agreement with the mining company. This led to the company filing for business rescue and allowed the Gupta family to buy the mine, which supplies the Hendrina power station. Ephron has also confirmed that former Mineral Resources Minister Mosebenzi Zwane flew to Switzerland to do the bidding for the Gupta-controlled Tegeta Exploration and Resources to take over the Optimum mine.

Acting senior GM for primary energy, Daniel Mashigo, showed the inquiry how in 2014, Eskom irregularly entered into a ten-year coal supply agreement worth R4.3-billion with Tegeta to supply coal at the Majuba power station, from its Brakfontein mine.

Considerable pressure was placed on Eskom employees to finalise the coal supply agreement within 48 hours.

Eskom chairperson Jabu Mabuza told the inquiry that important decisions about the power utility were made by people outside its appointed structures. He explained that Gupta-linked individuals would send instructions to Eskom executives about guarantees and coal contracts. Mabuza has described Eskom as the "main stage in the theatre of corruption" and said that, when the new board arrived, it had found a raft of problems plaguing the power utility, including graft, malfeasance and low staff morale.

## OIL AND GAS

### New gas resource discovered offshore South Africa

France's Total and partners have announced a gas condensate discovery offshore South Africa that could hold total resources of one-billion barrels of oil equivalent. Total and its partners own the exploration rights to the Brulpadda block, 275 km south of Mossel Bay. The oil giant struck 57 m of gas 3 633 m deep. The companies will resume drilling at Brulpadda in December.

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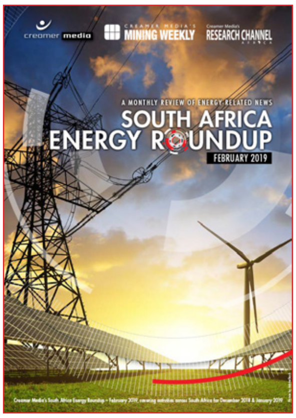





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