creamer media

CREAMER MEDIA'S MINING WEEKLY

Creamer Media's RESEARCH CHANNEL AFRICA

A MONTHLY REVIEW OF ENERGY-RELATED NEWS

SOUTH AFRICA ENERGY ROUNDUP

JUNE 2018

Creamer Media's South Africa Energy Roundup – June 2018, covering activities across South Africa for May 2018

Picture by Creamer Media

ENERGY PLANNING

IRP to be presented to Cabinet in mid-August

The long awaited update to South Africa's Integrated Resource Plan (IRP) will be presented to Cabinet for its approval on August 15. The document, which will provide much-needed certainty for investors in the electricity sector, will be released for public comment and will also be subjected to stakeholder consultations within the National Economic Development and Labour Council (Nedlac). However, the Department of Energy does not envisage, at this stage, conducting roadshow-style public hearings, as was the case during the first quarter of 2017 with the 2016 IRP Base Case. Under Energy Minister Jeff Radebe, the IRP update will include revised technology-cost assumptions, as well as changes to the demand outlook. The Department of Energy is leading the final technical work, with support from State-owned power utility Eskom. Once the technical modelling is complete, a revised document will be presented to Cabinet in the coming weeks with an associated request that it be disseminated for public comment. The comments process will be conducted in parallel to the Nedlac consultations.

Warning that IRP could face legal challenges if constitutional obligations are ignored

The Life After Coal (LAC) Campaign and Greenpeace Africa say the Department of Energy (DoE) will face a legal challenge from them if the Integrated Resource Plan (IRP) ignores constitutional obligations. The LAC Campaign and Greenpeace Africa believe human rights, and specifically the right to a healthy environment and to water, are as important as economic cost when planning South Africa's energy future. For this reason, the organisations say the IRP must take into account all the external costs associated with the different technologies included in the IRP. A legal challenge will be a blow to the DoE, which has been led by four Ministers in under a year. Centre for Environmental Rights pollution and climate change programme head Robyn Hugo says: "There is no question that new-build solar and wind energy are cheaper than coal. We also need to take into account the cost of coal's impacts to human health, water, climate and the environment. Even if the updated IRP guarantees the cheapest electricity, if it ignores the [other] costs of each energy source, it will be in violation of the Constitution."

COAL

Eskom aims to fully restore coal stocks by November

State-owned power utility Eskom has said that load-shedding is not likely to occur during the high-demand winter period, despite low coal stocks at seven of its power stations. Coal stocks have fallen, in recent months, to below the 20-day target at the power plants. The power stations affected include Arnot, Tutuka, Majuba, Hendrina, Camden, Kriel and Komati. CEO Phakamani Hadebe, who at the time was still acting in the position, said on May 3 that the stocks had already been restored to desired levels at the Komati power station and, following receipt of a notice from the National Treasury providing Eskom with an exemption from normal competitive procurement practices, there was an expectation that stocks should be fully restored across the entire 15 coal station fleet by November.

Eskom reverses policy on cost-plus mines

In a major policy reversal, State-owned electricity producer Eskom is budgeting to invest in the sustenance of mines that supply coal to the utility on a cost-plus basis. During Brian Molefe's controversial tenure as Eskom CEO, the utility became hostile to the cost-plus model. Under the leadership of new CEO Phakamani Hadebe, that policy has been reversed and the recapitalisation of cost-plus mines is one part of the organisation's three-pronged coal procurement strategy. The other two pillars are the selection of bidders to supply it with an additional 100-million tons of coal over the coming five years and finalising the 60-year coal-supply contract for the Kusile power station, in Mpumalanga. Eskom is evaluating responses to a tender to supply 100-million tons of coal, but these contracts will not be in place before the 2019/20 financial year. The long-term coal strategy has been endorsed by the National Treasury and the Department of Public Enterprises. Eskom still needs to shore up its coal supply for future operations, as it currently had only 84% of its coal contracted up until 2025. At current procurement rates it is estimating a 15% yearly shortfall against its production and stockpile targets.

Two coal IPPs to cost South Africa an additional R20bn – report

A report released by the University of Cape Town's Energy Research Centre (ERC) shows that government's planned independent power producer (IPP) coal plants – Thabametsi and Khanyisa – will cost South Africa an additional R19.68-billion, compared with a least-cost energy system. Thabametsi – a 557 MW plant to be based near Lephalale, in Limpopo – and Khanyisa – a 336 MW plant to be based near eMalahleni, in Mpumalanga – are the preferred bidders under the first bid window of the Coal Baseload IPP Procurement Programme. The report states that the two coal IPPs are not needed to meet the country's medium-term electricity demand. Where future capacity is needed, this is met more cheaply by other electricity sources such as wind, solar and flexible gas generation, it points out. The new plants will also increase greenhouse-gas emissions by 205.7-million tonnes of carbon dioxide equivalent over the 30-year period of the power purchase agreements, and negate most of government's emission mitigation plans, including the vast majority of the expected emissions savings of the entire energy efficiency strategy to 2050.

NUCLEAR

Eskom continuing with nuclear plans pending IRP update

State-owned power utility Eskom is going ahead with tentative plans for new nuclear capacity amid uncertainty about whether the technology will be included in the updated Integrated Resource Plan (IRP), which will be released for public comment soon. Eskom acting general manager for nuclear new build Loyiso Tyabashe has said that the Eskom team will continue its preparatory work for nuclear until it is told otherwise. Speaking at the African Utility Week, in May, he acknowledged the April 2017 Constitutional Court judgement that halted nuclear deals with Russia and other countries, but said he was driven by the 2010 IRP, which remained government policy until it was replaced by a new iteration. Tyabashe said his team was working on licence applications and authorisations.

RENEWABLE ENERGY

Alternative energy continues to power Robben Island

A solar and lithium-ion microgrid installed on Robben Island last year has produced 650 000 kWh of solar energy so far. Since adopting a green system, the island has produced an average of 3 250 kWh/d of power, says SOLA Future Energy CEO Dominic Wills. The island used to rely on diesel-powered generators for its power needs, with the diesel transported to the island by ship, primarily to desalinate the island's water supply. The Department of Tourism set aside funding for a microgrid project with a solar photovoltaic (PV) system. SOLA Future Energy was awarded the contract and installed a PV farm. The microgrid is the largest combined solar and lithium-ion storage facility in South Africa. The company is now moving into hard-to-reach areas and towns, such as Clanwilliam, where it is helping to power the Cedar Mill shopping centre. The developers have applied to State-owned power utility Eskom for a 500 kVA connection to power the centre, but the utility was only able to approve half of its demand requirements due to local constraints to the grid. SOLA Future Energy was able to integrate a microgrid into the shopping centre to make up for the shortfall and relieve the centre's reliance on diesel generators.

Minister officiates at launch of R9.4bn Xina Solar One plant

Xina Solar One, which is owned by a consortium between Abengoa, the Industrial Development Corporation, the Public Investment Corporation and the Xina Community Trust, was officially launched near Pofadder, in the Northern Cape, on May 18. The 300 ha solar thermal plant, which was built by Abengoa, became fully operational on August 1 last year and follows the successful launch of two other solar thermal plants in the Northern Cape, KaXu Solar One and Khi Solar One. The R9.4-billion Xina Solar One project will supply clean electricity to State-owned Eskom under a 20-year power purchase agreement. The Xina Solar One plant produces about 100 MW of power.

Nersa withdraws SSEG registration rules

Nonprofit organisation, the Organisation Undoing Tax Abuse (Outa), has welcomed the National Energy Regulator of South Africa's (Nersa's) decision to withdraw the proposed rules to govern the registration of small-scale embedded generation (SSEG) below 1 MW. The proposed SSEG rules were published for public comment by Nersa on its website in April. Nersa has withdrawn the draft rules until the Department of Energy gazettes a revised notice. Outa believes there is a lack of clarity by those in authority with regard to the need for and purpose of the registration of SSEG. The organisation is also concerned about Nersa's readiness to administer the registration process.

Published by:

ZEST WEG Group

Researchers suggest 100% renewable-energy system is plausible

A multinational group of researchers have co-authored a paper to demonstrate that there are no roadblocks to sourcing 100% of a country's power supply from renewable sources. The researchers, from Germany's Karlsruhe Institute of Technology, South Africa's Council for Scientific and Industrial Research (CSIR), Finland's Lappeenranta University of Technology, the Netherlands' Delft University of Technology and Denmark's Aalborg University, authored a response to the 2017 review paper by University of Adelaide researcher Benjamin Heard and his colleagues. Heard and his colleagues questioned the feasibility of many of the recent scenarios for high shares of renewable energy, questioning everything from whether renewables-based systems can survive extreme weather events with low sun and low wind, to the ability to keep the grid stable with so much variable generation. Co-author, and now former CSIR employee, Dr Tobias Bischof-Niemz, says, "It's beyond any scientific doubt that a renewables-led energy system is technically feasible, and recent technology cost developments for solar and wind have now made it economically viable too."

The stability of the grid poses specific challenges in South Africa with existing low levels of interconnectivity with neighbours. To maintain stability, there are a series of technical solutions, from rotating grid stabilisers to newer electronics-based solutions.

The scientists have collected examples of best practice by grid operators from across the world, from Denmark to Tasmania. The response by the scientists has now appeared in the same journal as the original article published by Heard and his colleagues.

South Africa urged to consider CSP-PV blend to lower cost of dispatchable solar generation

International technology and infrastructure group Abengoa, which has developed a portfolio of three concentrated solar power (CSP) projects in South Africa, believes blending CSP with solar photovoltaic (PV) technology is the logical next step for lowering CSP costs, while also producing dispatchable solar power. Abengoa South Africa business development VP Dominic Goncalves says the group remains optimistic about the future of CSP, despite criticism of the technology's costs and recent delays to South Africa's renewable-energy procurement programme. He says substantial progress has been made over the past four years in the scale and efficiency of CSP projects being developed in the Middle East, Africa, China and the Americas, which has helped reduce operating costs. However, building hybrid plants, which incorporate both solar technologies, could assist in reducing costs even further. Such an approach is already being pursued in Morocco, where low-cost PV plants will be used during the day, while the solar-thermal power produced using CSP is stored in tanks for release to the steam generators at night, or when there is insufficient solar radiation for PV generation during the day. All three of Abengoa's South African plants include storage capacity, with the R9.5-billion Xina incorporating five-and-a-half hours of storage, enabling the plant to supply into the grid during the evening peak from 16:30 to 21:30. Storage at KaXu and Xina is based on molten salts, while Khi employs super-heated steam.

Umoya study affirms social benefits of renewable energy IPPs

A social-impact study done by infrastructure investment managers Umoya Energy has found that the Renewable Energy Independent Power Producer Procurement Programme is effective in delivering on social benefits through meaningful initiatives.

Umoya Energy regional community operations manager Veronique Isaacs says the renewable-energy industry's socioeconomic development mandate is unique to South Africa and the study on local community investment shows that, through targeted beneficiary programmes, it can make a lasting and powerful difference. While the majority of the industry's socioeconomic development programmes have singled out education as a primary focus, Umoya Energy created a multitiered project that is designed to improve the social and economic wellbeing of residents within the Saldanha Bay local municipality, and specifically Hopefield. Umoya says that the focus of the impact study found that the Hopefield home improvement project phase 1 has been effective in improving living conditions, with 99% of residents affirming this.

The home improvement project has been benefiting the community of Hopefield since 2014. This programme aims to upgrade almost 1 000 low-income households over a six-year period, as well as provide skills training and create local enterprises. It is estimated that this project has already benefited more than 3 000 residents, whose lives are more comfortable, especially during the winter. Insulation, solar heated water, safe electrical installation and carpentry have gone a long way to improve lives in this community, notes Isaacs.

ELECTRICITY TARIFFS

Eskom wants 3% on top of any tariff hike for three years to claw back R66bn-plus

State-owned electricity utility Eskom has proposed a five-year phasing-in period to recoup R66-billion-plus in cost and revenue variances contained in three separate Regulatory Clearing Account (RCA) applications. The applications cover the financial years 2014/15, 2015/16 and 2016/17, which all fell within the third multiyear price determination (MYPD3) window, which operated for five years between April 1, 2013 and March 31, 2018. The RCAs are being adjudicated simultaneously following a protracted period during which the National Energy Regulator of South Africa (Nersa) refrained from assessing new RCAs, owing to a 2016 High Court ruling, deeming as illegal the RCA adjudication process carried out for the 2013/14 financial year. However, subsequent rulings by the Supreme Court of Appeal and, again in August last year, by the Constitutional Court, opened the way for Nersa to begin processing RCA applications once more. The utility has argued that the amount could be recouped through three separate yearly increases of 3% over-and-above any tariff hikes approved as part of the fourth multiyear price determination (MYPD4), which Nersa will deliberate upon later this year. Eskom says the RCA-related increases will have to be sustained in the base tariff for a period of five years in order for Eskom to recover the full R66.6-billion sought for the three years, as well as any further recoveries made in favour of Eskom for the 2017/18 RCA application. The 2017/18 RCA application, which also fell within the MYPD3 period, will be submitted by August and will seek to recover a further R20-billion in cost and revenue variances. Assuming allowable revenue of R200-billion, the proposed three hikes of 3%, which will be on top of any MYPD4-related adjustment, will translate to recoveries of R6-billion in 2019/20, R12-billion in 2020/21, and R18-billion a year from 2021/22 through to 2023/24. Therefore, the RCA recovery will continue into beyond the MYPD4 period.

Large power users urge Nersa to hold Eskom accountable for inefficiencies

The Energy Intensive Users Group of Southern Africa (EIUG) has argued that any cost-recovery granted to State-owned power utility Eskom in relation to three Regulatory Clearing Account applications under review by the regulator be capped at R40.5-billion instead of the requested R66.6-billion. However, it has also urged the National Energy Regulator of South Africa (Nersa) to refrain from granting any relief before determining whether the costs had been prudently and efficiently incurred. In fact the EIUG, whose 30 mining and industrial company members collectively consume more than 40% of the country's electricity, warned that its member firms were not in a position to absorb any further price increases while remaining in business.

ESKOM LEADERSHIP

Hadebe confirmed as Eskom CEO

Government has appointed Phakamani Hadebe as CEO of State-owned power firm Eskom, ending a string of interim appointments that stretches back to 2016. Hadebe has been acting CEO of the power utility since January.

ESKOM RESTRUCTURING

Eskom business model under review

Public Enterprises Minister Pravin Gordhan has confirmed that the business model of State-owned power utility Eskom is up for discussion as government aims to reduce the fiscal risk currently posed by the utility and to reposition the State-owned enterprise for future sustainability. CEO Phakamani Hadebe has indicated that revenue maximisation, the resolution of Eskom's R13.5-billion municipal debt problem, as well as Eskom's high costs are receiving attention. Several energy commentators have cautioned that Eskom is facing a "utility death spiral", which could only be overcome through radical restructuring, including the vertical separation of Eskom's generation assets from its transmission and distribution businesses. However, the National Union of Mineworkers has expressed deep scepticism about the restructuring proposals, warning that the board is preparing the entity for privatisation.

OTHER

Radebe sees energy contributing $25bn to South Africa's $100bn investment target

Energy Minister Jeff Radebe says one-quarter, or $25-billion, of South Africa's newly announced five-year investment target of $100-billion could be met through

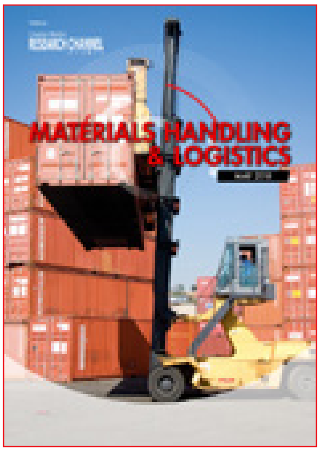
Published by:

ZEST WEG Group

investments in new energy projects, including a possible new greenfield crude oil refinery and a gas pipeline linking South Africa to the Rovuma basin, in northern Mozambique. He stressed that government foresaw gas-related investments, including domestic shale-gas projects, contributing materially to the investment target, along with further renewable-energy and conventional power projects. The R56-billion-worth of investments arising from the recent signing of 27 renewable-energy independent power producer (IPP) projects would kick start the energy sector's contribution to meeting the investment target set by President Cyril Ramaphosa in April. Since 2011, South Africa's renewable-energy procurement programme had facilitated $10.8-billion worth of IPP investments into South Africa. The role, if any, that nuclear energy could play in the investment roll-out would be determined by the electricity generation mix decided in the impending update to the Integrated Resource Plan. Radebe said the goal of the energy sector contributing one-quarter of the $100-billion investment target could also include:

- Securing strategic stocks through investment in new fuels tanks and in infrastructure required for South Africa to become a major shale gas producer.
- Promoting natural gas by designing and building infrastructure required to transport natural gas and liquefied natural gas.
- Driving towards cleaner fuels by improving the country's refinery assets to meet world-class emissions standards.
- Supporting the transition towards electrification of transport, through key strategic partnerships.

For other reports from Creamer Media, click on cover images below



This report has been compiled by Creamer Media's Research Unit, based in Johannesburg, South Africa. It forms part of a monthly series that is available for purchase, as well as free of charge to subscribers to Creamer Media's *Research Channel Africa* and *Mining Weekly Research*. The information has been drawn from sources believed to be reliable, but no warranty is made on the accuracy of such information. The report covers activities across South Africa for May 2018.

Publication date: June 2018

Main sources: *Engineering News*, *Mining Weekly*, African News Agency, News24Wire and Reuters.