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APRIL 2019





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Time to move from hostility to hope



It is no secret that South Africa's construction sector is in an extremely perilous state. The decline in workflow and the squeeze on margins have left large and small construction companies struggling for survival.

Some of the country's biggest firms have applied for business rescue while others have sold or are planning to sell their South African general construction divisions to focus on global niche markets, such as mining, or infrastructure opportunities abroad.

This unsupportive environment has been made all the more hostile, as several construction sites have become targets for criminality and violence. The South African Forum of Civil Engineering Contractors (Safcec) raised this problem in recent letters to President **Cyril Ramaphosa** and Finance Minister **Tito Mboweni**.

Safcec CEO **Webster Mfebe** wrote that he was gravely concerned that construction projects, collectively valued at R25.5-billion, had been violently disrupted or halted in recent months. He revealed that, largely as a result of the incidents, 110 engineers and other skilled technical personnel had left the country. Safcec requested an urgent meeting with Ramaphosa to discuss the emergency, as well as the lack of work and the nonpayment of contractors by public-sector clients.

These difficulties are partially reflected in this (Projects in Progress) supplement, with very few new projects being featured. Amid the gloom, however, there are a few behind-the-scenes developments that, if successful, could offer hope.

One of these is the inclusion of the construction industry in the so-called Public-Private Growth Initiative, which is seeking to unlock investment and growth across various sectors of the economy, from aerospace to tourism.

Without question, any revival in the fortunes of the domestic construction sector will hinge on there being a recovery in the pace and scale of fixed investment across the public and private sectors, and for a good portion of that investment to be construction-related.

To move from hostility to hope, the sector is calling on government to allow for greater private participation in the delivery of public infrastructure. It is estimated that about R140-billion-worth of power and nonpower infrastructure projects could be unlocked in the process.

It's a vision that is fully aligned with government's Economic Stimulus and Recovery Plan, announced in September 2018, which recognises that partnerships will be key to delivery amid severe fiscal constraint. Such a delivery model could also help close some of the country's prevailing infrastructure gaps, which have emerged as a key source of anger, frustration and protest in recent years.

Martin Creamer

Publishing Editor



Projects in Progress 2019

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- Automotive
- Electricity
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- Petrochemicals
- REIPPPP
- Transport & Logistics
- Water



Source: Neupoon Wind Farm

Automotive



The South African automotive industry is relatively small on a global scale; however, it is a critical part of the domestic economy, with its contribution to gross domestic product estimated at 7.70%. It is the country's most important manufacturing sector, with about one-third of value-addition within the domestic manufacturing sector derived either directly or indirectly from vehicle assembly and automotive manufacturing activity.

The major local vehicle manufacturers invested R7.24-billion in the sector in 2018, reflecting investment projects by the major vehicle manufacturers as a result of the updated Automotive Production and Development Programme and projecting higher levels of production for export markets.

One such vehicle manufacturer is Mercedes-Benz South Africa (MBSA), which confirmed in June 2018 that the new-generation C-Class would be built at the East London MBSA plant, in the Eastern Cape. The company will be investing €600-million to expand the plant and equip it for the future.

A commitment has also been made by the CEOs of the seven automotive original-equipment manufacturers to invest a combined R40-billion over the coming five years, as part of President **Cyril Ramaphosa's** \$100-billion investment drive. This is in addition to the R7.24-billion invested by the major local vehicle manufacturers in 2018. These investments will bring new model tooling, advanced manufacturing technology and additional localisation of parts to South African shores.



Source: MBSA



Mercedes-Benz South Africa manufacturing plant expansion

Name of the Project

Mercedes-Benz South Africa (MBSA) manufacturing plant expansion.

Location

East London, Eastern Cape, South Africa.

Project Owner/s

MBSA.

Project Description

MBSA plans to significantly expand its East London manufacturing plant to build the new-generation Mercedes-Benz C-Class. The project includes the construction of a new body shop, expansion of the paint shop, an upgrade of the assembly shop and new logistics warehouses.

The new body shop has been designed for higher capacities and features more than 500 Internet of Things-ready robots, laying the foundation for Industry 4.0 readiness.

A further expansion within the assembly shop will incorporate about 700 t of structural steel to be installed for the addition of three production lines within the existing shop. Using new paint application technology and/or methods, the refurbished and expanded paint shop will be more energy efficient and environment friendly.

Overall, the energy consumption per vehicle produced is targeted to be reduced by 25%, in line with the plant's initiative for green production. Other examples include an on-site energy storage solution (battery

storage container pilot), water storage of one-million litres and the creation of green corridors.

Potential Job Creation

The expansion will create additional jobs at the manufacturing facility, including in the supplier landscape.

Capital Expenditure

€600-million.

Planned Start/End Date

Not stated.

Latest Developments

The project was announced at the end of June 2018.

Key Contracts and Suppliers

None stated.

On Budget and on Time?

Not stated.

Contact Details for Project Information

Mercedes-Benz Cars global business communications head **Sofia Stauber**, tel +49 711 174 0598, fax +49 711 177 909 1184 or email sofia.stauber@daimler.com.

MBSA corporate affairs manager **Thato Mntambo**, tel +27 12 677 1621 cell +27 61 442 9858 or email thato.mntambo@daimler.com.



Source: MBSA

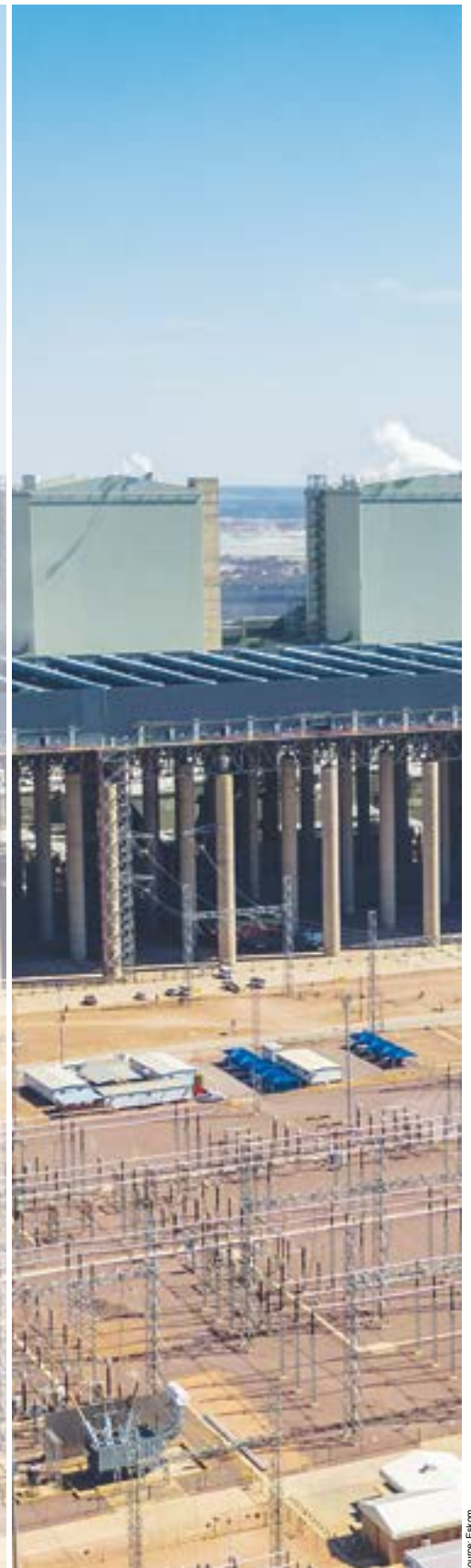
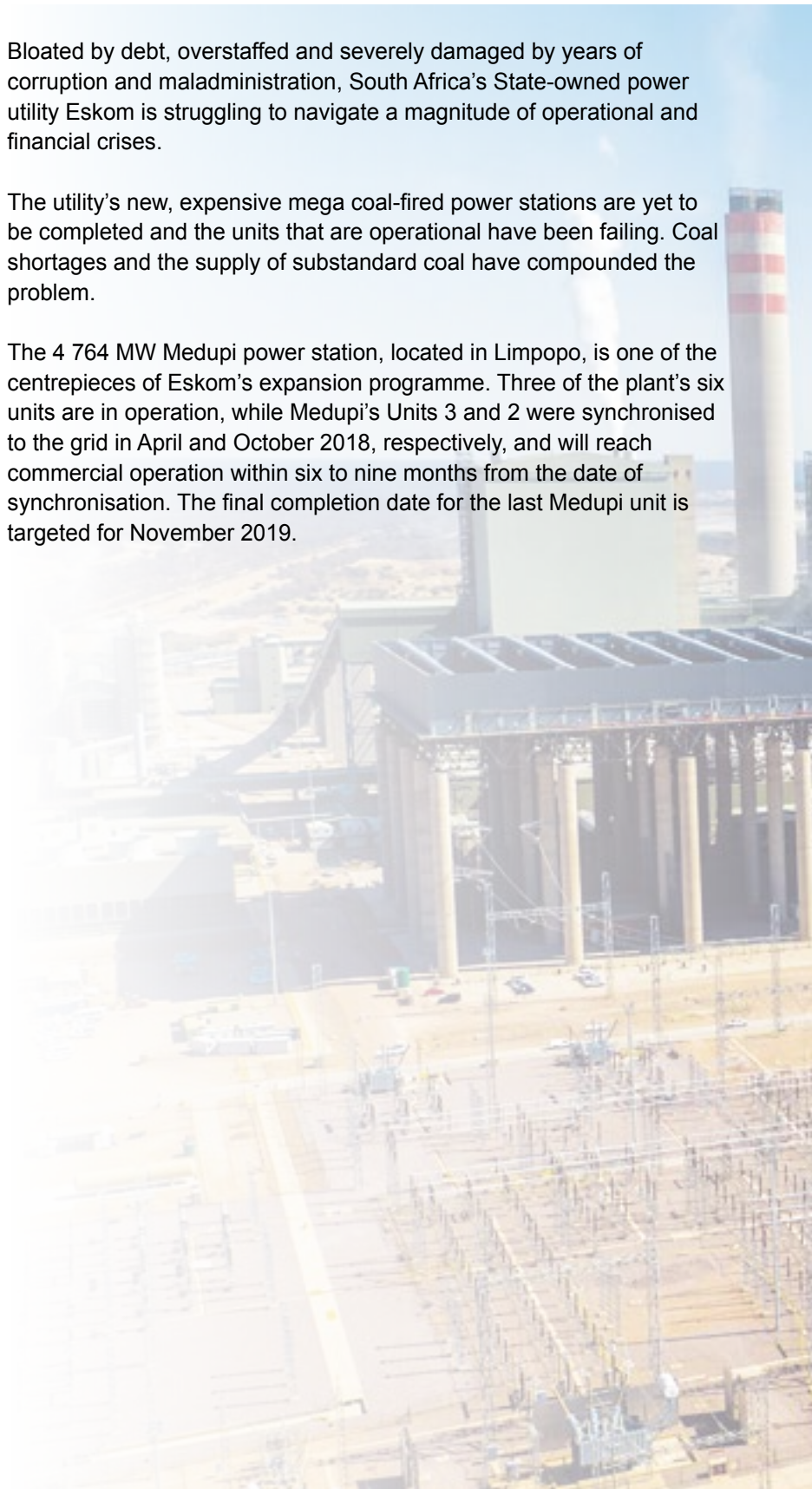
Electricity



Bloated by debt, overstaffed and severely damaged by years of corruption and maladministration, South Africa's State-owned power utility Eskom is struggling to navigate a magnitude of operational and financial crises.

The utility's new, expensive mega coal-fired power stations are yet to be completed and the units that are operational have been failing. Coal shortages and the supply of substandard coal have compounded the problem.

The 4 764 MW Medupi power station, located in Limpopo, is one of the centrepieces of Eskom's expansion programme. Three of the plant's six units are in operation, while Medupi's Units 3 and 2 were synchronised to the grid in April and October 2018, respectively, and will reach commercial operation within six to nine months from the date of synchronisation. The final completion date for the last Medupi unit is targeted for November 2019.



Source: Eskom



Eskom's Medupi power station project

Name of the Project

Medupi power station project.

Location

Medupi is located on an 883 ha site in Lephalale, Limpopo, in South Africa.

Project Owner/s

State-owned power utility Eskom.

Project Description

Medupi will be the fourth-largest coal-fired power plant and the largest dry-cooled power station in the world. The power station will comprise six units with an installed capacity of 4 764 MW.

The planned operational life of the station is 50 years.

The power station will use high-tech supercritical boilers, which will operate at higher temperatures and pressures, compared with that of older boilers, thereby providing greater efficiency. Supercritical technology will result in more efficient use of natural resources, such as water and coal, and will have improved environmental performance and footprint.

The project is somewhat unique because Medupi is being built in reverse order – traditionally Eskom has always started building Unit 1 and ended with Unit 6.

This new approach is the result of the rock agglomeration on the southern side of the site, which was excavated and reused for engineering fill on the northern side.

The project forms part of the utility's integrated strategic electricity plan and is designed to be flue-gas desulphurisation ready.

Potential Job Creation

About 18 000 construction contractor employees and 2 000 supporting staff were employed at the peak of construction.

Capital Expenditure

In July 2016, Eskom officially updated its cost-to-completion estimates for Medupi. The State-owned utility reported that Medupi was now expected to cost R145-billion, rather than the earlier revised estimate of R105-billion.

The cumulative cost incurred on the project for the year ended

March 31, 2019, was not available at the time of going to print.

Planned Start/End Date

Construction activities started in May 2007.

The first unit, Unit 6, was first synchronised to the grid in the first quarter, beginning in March 2015. On August 23, 2015, Unit 6 of Medupi became commercially operational.

Unit 5 was successfully synchronised to the national grid on September 8, 2016, ahead of schedule, and reached full load on December 17, 2016. After completing performance, reliability and compliance tests, the unit attained commercial operation on April 3, 2017, also ahead of schedule.

Unit 4 was synchronised in May 31, 2017, and achieved commercial operation status on November 28, 2017, ahead of the scheduled timeline of July 2018.

Unit 3 reached first synchronisation in April 2018, and attained full load in May 16, 2018. The second last unit, Unit 2 was first synchronised to the grid in October 07, 2018, achieved full load in November 12, 2018.

The completion of the entire six-unit Medupi project has been revised to 2020/21 financial year.

Latest Developments

Eskom has offered a sobering update on the difficulties it is having at its Medupi project, which is not only years behind schedule and significantly over budget but also beset with technical defects that are resulting in a serious underperformance of the three units that have entered into commercial operation.

Officially, Medupi is expected to cost R145-billion to build. The project is two-and-a-half times more expensive than what was initially budgeted and is well behind schedule.

In a presentation delivered during the National Energy Regulator of South Africa (Nersa) public hearing on February 1, technology GM Dr **Titus Mathe** said the three Medupi units currently in commercial operation had, for the financial year to date, experienced a total of 66 unit trips from 20 during the 2018 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 on planned outage for three months from the start of September to 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. Earlier this year, Eskom indicated that the resumption of load-shedding in late 2018 was partly the result of the underperformance of those Medupi units that had been brought into commercial operation.

While Eskom initially described the poor performance of the units as “teething problems”, Public Enterprises Minister **Pravin Gordhan** indicated that they could be more fundamental, particularly in relation to the performance of the boilers, the grinding mills and the fabric filters.

An issue investigation was instituted in 2018 to understand the problems.

Mathe has confirmed that major design and technical problems have been discovered, most of which relate to the boilers. Some of the technical issues identified include:

- the boiler spray systems being unable to cope, owing to a design that has resulted in higher-than-expected temperatures at the reheater.
- excessive wearing of fabric filter plant bags, which is resulting in ash blockages, trips, load losses and emissions-related losses.
- the milling plants at Medupi are failing to meet technical requirements, which has halved the time between servicing intervals, negatively affected coal quality and has resulted in partial load losses.
- the gas air heater performance and fouling is not meeting technical requirements.
- problems with the dust handling plant, which is leading to high ash accumulation, leaks and more frequent maintenance, which is resulting in a lack of spare parts.
- hardware failures on the distributed control system at two Medupi units is leading to trips.

High vibrations on the generator auxiliary cooling loop.

Eskom has established a specialist team to develop solutions to rectify major defects and work streams have been established with contractors to jointly evaluate solutions.

Mathe has insisted that Eskom “knows exactly” what the challenges are and that detailed plans are in place to address the unit trips.

He has said that Eskom expects to have technical positions for all the defects within the coming six months. It will then enter into

commercial discussions with contractors regarding liability for the defects and on how the repairs will be implemented.

He has warned that some of the repairs will require the units to be on extended outage, which means that the defects will probably be repaired in phases from about 2021 onwards.

The timetable for the remaining Medupi units has been slightly extended. The final completion date for the last Medupi unit has been shifted to November 30, 2019, from May 31, 2019.

Key Contracts and Suppliers

Principal Contracts:

Parsons Brinckerhoff (execution partner); Roshcon (enabling civils); Rula Bulk Materials Handling (coal overland conveyor and ash dump conveyor); Mitsubishi Hitachi Power Systems Africa, or MHMPSA (boiler); Alstom S&E Africa (turbine); LP Services consortium (low-pressure services); Alula Water (water treatment plant); Karrena-Concor joint venture, or JV (chimneys and silos); MPS JV (main civils); Actom (electrical power installation and medium-voltage switchgear); General Electric (low-voltage switchgear system); Siemens (auxiliary transformers and generator transformers); Standby Systems (uninterruptible power supply); Alstom C&I (control and instrumentation); Honeywell Automation & Control Solutions South Africa (fire detection and access control); T-Systems (information technology (IT) and IT infrastructure); Siemens ACI Open Consortium (laboratory and analysers); Civcon/G4 JV (miscellaneous infrastructure and reservoirs); Basil Read (buildings, ash dump infrastructure, clarifiers and coal stock yard extension); NCI (diesel generators); thyssenkrupp Materials Handling (coal stockyard equipment); Clyde Bergemann Africa (dust handling and conditioning systems); ELB Engineering Services (terrace coal and ash); Aveng Grinaker-LTA (buildings phases 1 and 3); Nugen Technologies (nitrogen); Stefanutti Stocks/Mathomamayo JV (raw water pumpstation and substation) and Exxaro (coal supply).

On Budget and on Time?

The project has been affected by technical and labour difficulties. However, measures have been put in place to accelerate progress on the project. This has been evident through the latest achievements of the project milestones as per the project plan.

Contact Details for Project Information

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The pulp and paper industry is one of the largest industries in the world.

However, in the context of the Internet economy age, the rapid transformation of the traditional media industry into new media and the rapid growth of online consumption, the product structure of the paper industry is changing.

While the widespread adoption of new media and paperless reading has led to a shrinking demand for printing and writing paper, as well as newsprint, the Internet and e-commerce business model has driven the rapid expansion of the express delivery business, and the demand for paper-based packaging paper.

Such trends are forcing paper makers to diversify – in the form of speciality packaging and innovative, functional bioproducts from wood fibre – to stay in business.

To this end, diversified wood fibre company Sappi proposes to expand capacity and undertake various continuous improvement initiatives and upgrade projects at the Saiccor mill – collectively known as Project Vulindlela. The project, located in KwaZulu-Natal, will entail maintenance and upgrade projects to decrease production costs, introduce new technology, optimise processes and future-proof manufacturing systems at Saiccor.



Source: Sappi



Sappi's Project Vulindlela

Name of the Project

Project Vulindlela.

Location

Umkomaas, in KwaZulu-Natal, South Africa.

Project Owner/s

Sappi.

Project Description

Sappi proposes to expand capacity and undertake various continuous improvement initiatives and upgrade projects at the Saiccor mill – collectively known as Project Vulindlela.

Vulindlela will increase the mill's production from 780 000 t/y to 890 000 t/y of dissolving wood pulp. The projects will include a new evaporator, recovery boiler and screening and washing plant, as well as upgrades to the bleach plant and pulp machines, improved recovery circuits and additional magnesium digesters.

Potential Job Creation

The project is expected to create significant job opportunities – during the peak of construction, between 1 800 and 2 100 contractors will work on site at a time.

Capital Expenditure

The project will cost R7.7-billion, which includes the capacity upgrade (R2.7-billion) and various environmental and continuous improvement projects (R5-billion).

The environmental projects constitute the majority of the total costs.

Planned Start/End Date

The project is scheduled for completion by mid-2020.

Latest Developments

Work has started on the project.

Key Contracts and Suppliers

Andritz, Valmet, GL&V, ND Engineering, ABB, Karasek, Murray & Roberts, Franki and Stefanutti Stocks.

On Budget and on Time?

Not stated.

Contact Details for Project Information

Sappi group corporate affairs head **André Oberholzer**,
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Petrochemicals



There is a critical shortage of supply of liquefied petroleum gas (LPG) in South Africa.

Bidvest Tank Terminals, a subsidiary of JSE-listed services, trading and distribution company Bidvest, and its joint venture partner Petredec are building a new facility for the import and storage of LPG in Richards Bay, KwaZulu-Natal.

The commissioning of this new large-scale facility – also capable of seaborne re-exports to neighbouring countries – is expected to assist in providing a viable, safer and more environment-friendly energy alternative for South Africans, with an increased, secure supply leading to lower supply prices to the local market.



Source: Bidvest Tank Terminals



Bidvest's liquefied petroleum gas import facility project

Name of the Project

Liquefied petroleum gas (LPG) import facility project.

Location

Richards Bay, KwaZulu-Natal, South Africa.

Project Owner/s

Petredec and Bidvest Tank Terminals.

Project Description

The project entails the development of a new facility for the import and storage of LPG.

The 22 600 t storage facility will be located at Bidvest's existing site in Richards Bay.

The completed facility will be the region's largest pressurised LPG import terminal, featuring four mounded tanks – each 60 m long and 16 m in diameter and capable of storing more than 5 600 t of gas, guaranteeing year-round availability.

The commissioning of this new large-scale facility – also capable of seaborne re-exports to neighbouring countries – will unlock previously unattainable economies, resulting in lower supply prices to the local market.

Dedicated 24 h road tanker and railcar loading facilities will ensure constant supplies 365 d/y, enabling local LPG marketers to guarantee product availability to their clients throughout South Africa.

Potential Job Creation

Not stated.

Capital Expenditure

R1-billion.

Planned Start/End Date

The project broke ground on October 25, 2018, with the facility slated for completion in July 2020.

Latest Developments

As at December 31, 2018, R308-million had been spent on the project.

Civil work required in preparation for the arrival of the storage tanks towards the middle of 2019 is complete. Tank fabrication is progressing well.

Commissioning is still targeted for the middle of 2020.

Key Contracts and Suppliers

None stated.

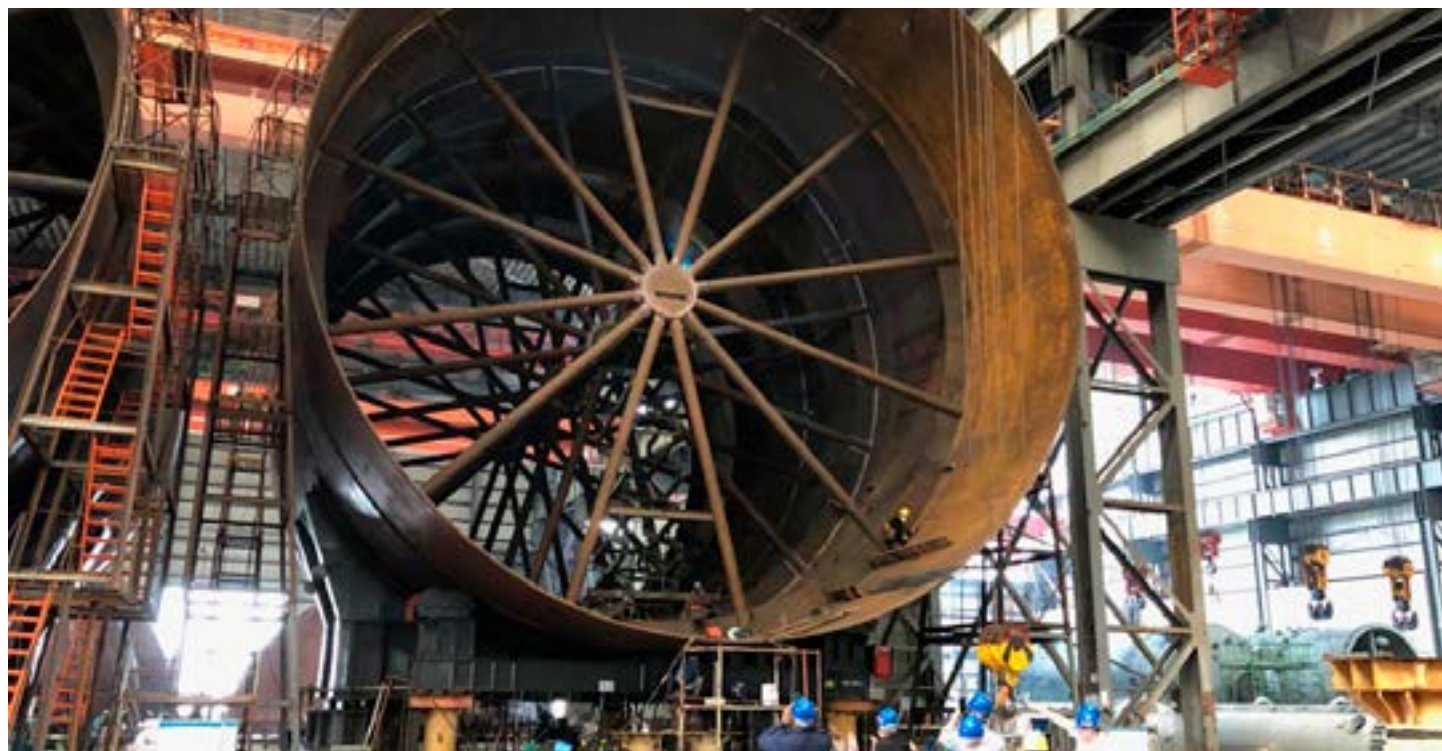
On Budget and on Time?

Too early to state.

Contact Details for Project Information

Petredec, tel +65 6305 1288, fax +65 6305 1289 or email lpg@petredec.com.sg.

Bidvest Tank Terminals, tel +27 31 277 5600 or email info@bidtanks.com.



Source: Bidvest Tank Terminal

REIPPPP



South Africa has started a partial shift from centralised, coal-based energy production to a more decentralised generation system, through the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

As at June 30, 2018, 3 776 MW of capacity from the REIPPPP was in commercial production, including 1 980 MW of onshore wind, 1 474 MW of solar photovoltaic, 300 MW of concentrated solar power, 14 MW of hydro and 8 MW of landfill technology.

Once globally acclaimed, the REIPPPP suffered a protracted period of uncertainty when State-owned power utility Eskom's refused to sign new power purchase agreements (PPAs) between 2015 and 2018 for capacity procured in bid windows 3.5 and 4. The REIPPPP was resuscitated in April 2018, when PPAs were signed with 27 independent power producers.



Source: SAWEA



Renewable Energy Independent Power Producer Procurement Programme – third window

Name of the Project

Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) – third window.

Location

South Africa.

Project Owner/s

Seventeen renewable-energy developers were appointed as preferred bidders, following the conclusion of bid submissions for the third round of the Department of Energy's (DoE's) REIPPPP.

Project Description

Seventeen renewable-energy developers have been appointed as preferred bidders.

The wind projects listed include:

- Gibson Bay Wind Farm (111 MW)
- Longyuan Mulilo De Aar wind energy facility (100.5 MW)
- Longyuan Mulilo De Aar 2 North wind energy facility (144 MW)
- Nojoli Wind Farm (88 MW)
- Khobab Wind Farm (138 MW)
- Noupoot Mainstream Wind Farm (79 MW)
- Loeriesfontein 2 Wind Farm (140 MW).

The solar photovoltaic (PV) projects named are:

- Tom Burke solar park (66 MW)
- Pulida solar park (82.5 MW)
- Mulilo Sonnedix Prieska solar park (75 MW)
- Mulilo Prieska solar park (75 MW)
- Adams (82.5 MW)
- Paleisheuwel (82.5 MW).

The preferred concentrated solar power bidders include Abengoa, with its Xina Solar One project (100 MW), and Karoshoek Solar One Project Company, with its Ilanga (Karoshoek Solar One) project (100 MW).

One landfill gas bidder, the Johannesburg landfill gas-to-electricity project, with a capacity of 18 MW, and one biomass bidder, the Mkuze biomass project, with a capacity of 16 MW, were also named.

Capital Expenditure

Not stated.

Planned Start/End Date

All projects have been completed.

Latest Developments

All projects have reached their commercial operation dates.

Key Contracts and Suppliers

Futuregrowth, Enel, EGP, Abengoa, Cobra Energia, Guodian United Power, Aurora Power Solutions, juwi Renewable Energies, Mulilo



Source: Coaster Media Chief Photographer Dylan Slater

Renewable Energy, Ener-G, Red Cap, Mainstream Renewable Power, African Clean Energy Developments, FG Emvelo and Navosync.

On Budget and on Time?

Too early to state.

Contact Details for Project Information

DoE departmental spokesperson **Thandiwe Maimane**, tel +27 12 444 4256, cell +27 82 450 8591, fax +27 86 581 8505 or email MediaDesk@energy.gov.za.

Companies Involved in the REIPPPP third window include:

Mainstream Renewable Power, **Emmet Curley**, tel +353 1 290 2027 or email emmet.curley@mainstreamrp.com.

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Renewable Energy Independent Power Producer Procurement Programme – fourth window

Name and Location

Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) – fourth window.

Location

South Africa.

Project Owner/s

Twenty-seven renewable-energy developers were appointed as preferred bidders, following the conclusion of bid submissions for the fourth round of the Department of Energy's (DoE's) REIPPPP.

Project Description

Twenty-seven REIPPPP project agreements were signed in April 2018.

The preferred bidders include 12 wind farm projects and 12 solar photovoltaic (PV) projects. The list also includes the 100 MW Redstone Concentrated Solar Power (CSP) project, in the Northern Cape, the 5 MW Kruisvallei mini-hydro project, in the Free State, and the 25 MW Ngodwana Energy biomass project, to be fuelled using waste Sappi wood chips, in Mpumalanga.

The wind projects include:

- Roggeveld Wind Farm (147 MW)
- Karusa Wind Farm (140 MW)
- Nxuba Wind Farm (140 MW)
- Golden Valley Wind Farm (120 MW)
- Oyster Bay Wind Farm (140 MW)
- Soetwater Wind Farm (140 MW)
- Kangnas wind project (140 MW)
- Perdekraal East Wind Farm (110 MW)
- Excelsior wind energy facility (32 MW)
- Wesley-Ciskei Wind Farm (35 MW)
- Copperton Wind Farm (102 MW)
- Garob Wind Farm (140 MW).

The solar PV projects include:

- Sirius Solar PV Project One (75 MW)
- Droogfontein 2 Solar (86 MW)
- Dyason's Klip 1 (75 MW)
- Dyason's Klip 2 (75 MW)
- Konkoonsies II Solar Facility (86 MW)
- Aggeneys Solar Project (45 MW)
- Loeriesfontein Orange project (75 MW)
- De Wildt solar project (50 MW)
- Bokamoso solar project (78 MW)
- Zeerust development (75 MW)
- Greefspan PV Power Plant Number Two solar park (55 MW)
- Waterloo solar park (86 MW).

Potential Job Creation

The 27 new projects will potentially create 58 000 new jobs, mostly during construction and mostly in the rural areas of the Northern,



Source: Mainstream Renewable Energy

Eastern and Western Cape provinces, as well as the North West, Free State and Mpumalanga provinces. There is also potential to create a further 1 500 jobs in the manufacturing sector as a direct spin-off from the projects.

Capital Expenditure

The successful fourth-round bids are valued at an estimated R56-billion.

Planned Start/End Date

Building Energy's Roggeveld Wind Farm, which is expected to be South Africa's most efficient wind farm, started construction in April 2018 and is expected to be completed in 2021.

Construction on Enel Green Power's Nxuba Wind Farm started in February 2019 and is expected to be completed by September 2020.

Construction of Enel Green Power's Oyster Bay and Garob wind farms is expected to start by the first half of 2019, while Soetwater and Karusa are expected to start construction in the second half of 2019.

All five wind farms are expected to be operational by 2021.

Mainstream Renewable Energy's Kangnas Wind Farm started construction in June 2018 and is expected to be complete in late August 2020.

Mainstream Renewable Energy's Perdekraal East Wind Farm started construction in June 2018 and is expected to be completed in late 2020.

BioTherm Energy's Excelsior and Golden Valley wind farms started construction in 2018 and are expected to reach commercial operation by the fourth quarter of 2019 and the fourth quarter of 2020 respectively. Construction of the Konkoonsies II and Aggeneys solar PV projects started in 2018 and are expected to reach commercial operation in the third quarter of 2019 and the first quarter of 2020 respectively.

Construction of Innowind's Wesley-Ciskei Wind Farm is expected to start in December 2019 and production to start in June 2021.

Elawan Energy's Copperton Wind Farm is expected to come into operation in 2020.

Scatec Solar's Sirius Solar, Dyason's Klip 1 and Dyason's Klip 2 solar PV projects are expected to enter into operation towards the end of 2019.

juwi started construction on the Droogfontein 2 and Bokamoso solar



projects in 2018. Waterloo is expected to start construction in the first half of 2019.

Construction of GRS's Greefspan PV Power Plant Number Two solar park will start in September 2019 and is expected to be completed by November 2020.

Latest Developments

Wind projects:

Nordex South Africa is supplying turbines to the Roggeveld and Nxuba wind farms, in the Eastern Cape, as well as the Copperton and Garob wind farms, in the Northern Cape, which are all under construction.

Vestas is supplying 70 of its wind turbines to the Karusa and Soetwater wind farms, in the Northern Cape. The turbines are expected to be operational by the second half of 2020.

Concor and Conco Consortium have been appointed as construction contractors for the Kangnas and Perdekraal wind farms, in the Northern Cape, while Siemens Gamesa Renewable Energy will supply and install the wind turbines.

Key Contracts and Suppliers

Enel Green Power (Nxuba, Oyster Bay, Garob, Karusa and Soetwater wind farms); BioTherm Energy (Golden Valley, Excelsior, Konkoonsies II, Aggeneys wind projects); Goldwind (engineering, procurement and construction, or EPC, contractor – Excelsior and Golden Valley projects); ET Solutions (EPC contractor – Aggeneys and Konkoonsies II projects); Mainstream Renewable Power (Kangnas and Perdekraal wind farms); Concor and Conco (construction contractor – Kangnas

and Perdekraal wind farms); Siemens Gamesa Renewable Energy (supply and installation of wind turbines – Kangnas and Perdekraal wind farms); Ngodwana Energy (biomass project); ELB Engineering Services, KC Cottrell and the ELB Educational Trust (EPC contractor – Ngodwana Energy biomass project); Building Energy and G7 Renewable Energies (Roggeveld Wind Farm); Nordex (wind turbines – Roggeveld, Nxuba, Copperton and Garob wind farms); Scatec Solar (Sirius Solar, Dyason's Klip 1 and Dyason's Klip 2 solar PV projects); Innowind (Wesley-Ciskei wind farm); Elawan Energy (Copperton, Roggeveld, Karusa, Nxuba and Golden Valley wind farms and Redstone CSP); Acwa Power Solar Reserve Redstone Solar Thermal Power Plant (Redstone CSP); Solar Capital (Loeriesfontein Orange solar PV project); juwi Renewable Energies (EPC and operation and maintenance contracts – Waterloo solar park, Bokamoso solar park and Droogfontein 2 solar park); Old Mutual Life Assurance Company and AECD (Droogfontein 2 and Zeerust solar parks) and GRS (Greefspan PV Power Plant Number Two solar park).

On Budget and on Time?

The 27 fourth round REIPPPP projects were identified as preferred bids in 2015, following bid windows 3.5 and 4 of the REIPPPP. However, the procurement process stalled after Eskom announced, in early 2016, that it would no longer conclude power purchase agreements with renewable-energy IPPs, owing to its return to a generation surplus.

Contact Details for Project Information

DoE departmental spokesperson **Thandiwe Maimane**, tel +27 12 444 4256, cell +27 82 450 8591, fax +27 86 581 8505 or email MediaDesk@energy.gov.za.



Source: Mainstream Renewable Energy

Transport & Logistics



Cruise vessel calls at Durban are projected to increase substantially from 60 a year to more than 150 a year by 2040, with the number of passengers expected to grow from 200 000 a year to over 700 000 a year.

State-owned transport and logistics utility Transnet National Ports Authority and the KwaZulu Cruise Terminal consortium signed an agreement in April 2018, to build a R200-million-plus cruise terminal at the entrance to the Port of Durban.

The wider vision for the new cruise terminal is to position Durban as a smart port city and a world-class cruise capital that will ultimately create jobs, introduce new technologies and grow tourism.





TNPA and KCT's Durban Cruise Terminal project

Name of the Project

Durban Cruise Terminal (DCT) project.

Location

Port of Durban, KwaZulu-Natal, South Africa.

Project Owner/s

Transnet National Ports Authority (TNPA) and the KwaZulu Cruise Terminal (KCT).

KCT, which is 70% owned by MSC Cruises, the largest cruise line operating in South African waters, and 30% by broad-based black economic empowerment investment company Africa Armada Consortium, was declared the preferred bidder for the 25-year concession project in May 2017.

KCT will finance, build, operate and maintain the new cruise terminal.

Project Description

The project entails the design, financing, construction, operation, maintenance and transfer of a cruise terminal facility for a 25-year concession period in the Port of Durban.

The terminal will be completed in phases and will eventually be able to accommodate two 91-m-long cruise vessels. The planned terminal, with a retail component, is designed as a multiuse facility for cruise and hospitality, and training, conferencing and events facilities.

The new 'green' and energy efficient terminal will include features and facilities that will allow for simultaneous handling of vessels.

There will be parking for 200 vehicles with kerbside drop-off facilities for 12 buses, dedicated baggage drop-off areas, separate screening and temporary holding areas, as well as separate passenger entry and exit points.

Potential Job Creation

According to KCT, the project will result in the creation of up to 10 000 employment opportunities through a multiplier effect, of which more than 100 will be direct jobs during the operation phase. KCT has set aside a budget of R3-million for the training and development of more than 100 people during the construction phase.

Capital Expenditure

Capital investment for the project has been estimated at R215-million.

Planned Start/End Date

The 18-month construction phase is expected to begin in 2019, with operations scheduled to start in 2020, in line with the 2020/21 cruise season.

Latest Developments

TNPA and KCT consortium officially signed an agreement on April 16, 2018, which will result in the construction of the cruise terminal at the entrance to the Port of Durban.

Key Contracts and Suppliers

KCT (preferred bidder for DCT).

On Budget and on Time?

Too early to state.

Contact Details for Project Information

TNPA corporate affairs executive manager **Ayanda Mantshongo**, tel +27 11 351 9013 or email ayanda.mantshongo@transnet.net.



Water



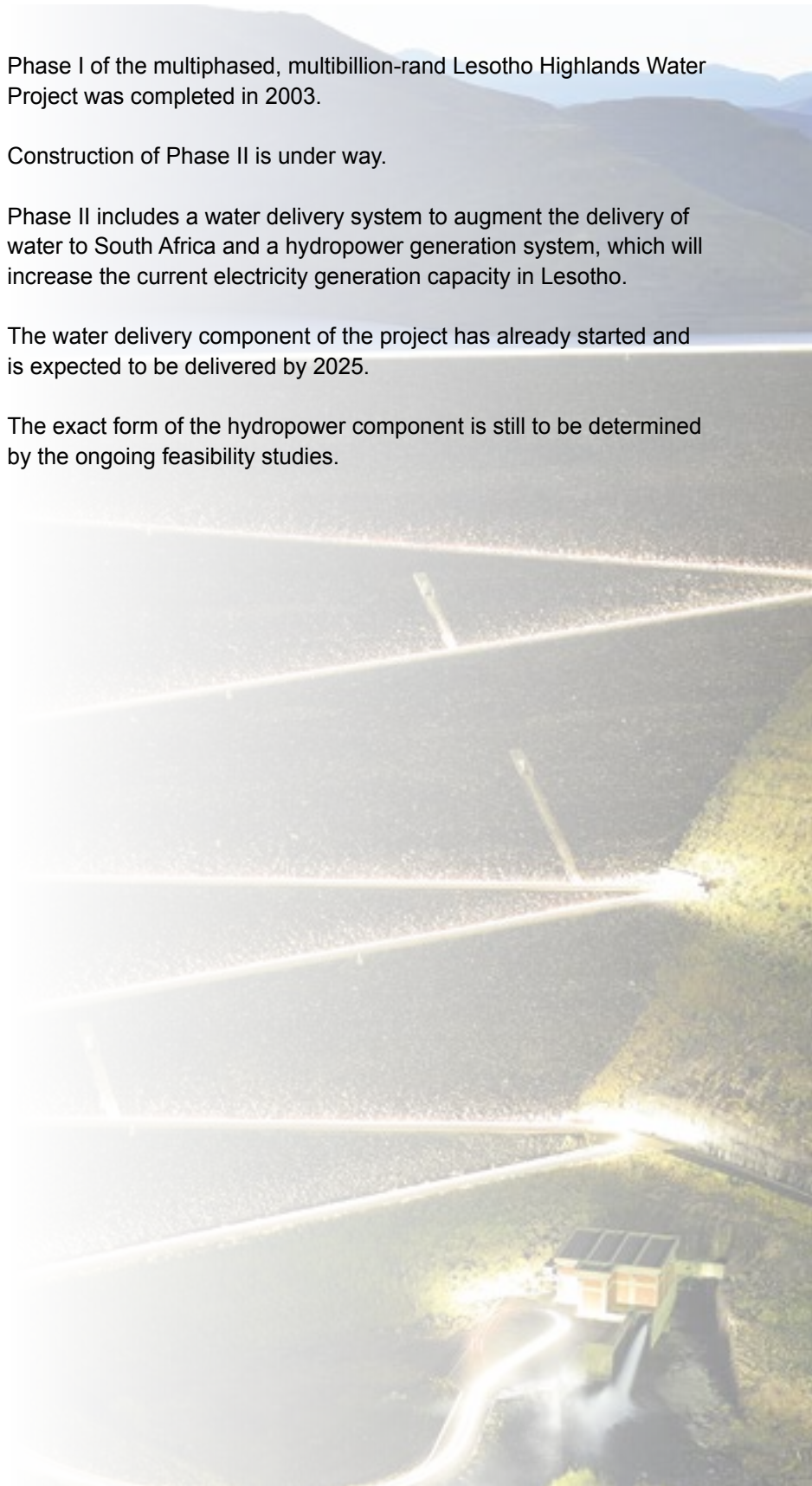
Phase I of the multiphased, multibillion-rand Lesotho Highlands Water Project was completed in 2003.

Construction of Phase II is under way.

Phase II includes a water delivery system to augment the delivery of water to South Africa and a hydropower generation system, which will increase the current electricity generation capacity in Lesotho.

The water delivery component of the project has already started and is expected to be delivered by 2025.

The exact form of the hydropower component is still to be determined by the ongoing feasibility studies.



Source: LHDA



LHDA's Lesotho Highlands Water Project – Phase II

Name of the Project

Lesotho Highlands Water Project (LHWP) – Phase II.

Location

Lesotho.

Project Owner/s

Implementing Authority

The Lesotho Highlands Development Authority (LHDA).

Oversight Authority

The Lesotho Highlands Water Commission has an oversight function, is the channel of governments' input into the project, represents and advises the two governments, as well as monitors the activities of the LHDA.

Project Description

Phase II of the LHWP builds on the 2003 completion of Phase I, which supplies water to Gauteng and uses the water delivery system to generate hydroelectricity for Lesotho.

Phase II will increase the current supply rate of 780-million cubic metres a year incrementally to more than 1.27-billion cubic metres a year.

Phase II of the LHWP will be implemented in terms of two distinct components: a water delivery system to augment the delivery of water to South Africa and a hydropower generation system, which will increase the current electricity generation capacity in Lesotho.

The additional feasibility studies for the hydropower component of Phase II are nearing completion. A market study and commercial viability analysis for the Kobong pumped-storage scheme has concluded that conventional hydropower is the more feasible option to meet Lesotho's energy needs. Reasons for this include the high cost of developing a pumped-storage scheme (estimated to be more than M20-billion) and other challenges related to the scheme's long-term economic viability such as the nonavailability of a willing excess power offtaker, and the steep project development cost. As a result, the decision was taken to advance the studies for two sites on the Senqu river and one at Oxbow to bankability stage. These studies are expected to be completed by the end of second quarter of 2019.

Potential Job Creation

Based on what transpired during the implementation of Phase I of the project, more than 3 000 jobs are expected to be created at the height of the construction phase of the main works of Phase II.

Capital Expenditure

The estimated cost of the Phase II water transfer component at completion in 2025 is expected to be R24-billion as per the December 2017 long-term cost plan. The cost of the hydropower component is yet to be established.

Planned Start/End Date

Water delivery commissioning and hydropower commissioning expected in 2026.

Latest Developments

The LHDA has announced the appointment of an engineering panel of experts for the LHWP Phase II.

The panel comprises a selection of experts from the UK, Europe,

the US and Australia, with the combined knowledge covering tunnelling, bridges, concrete-face rockfill dams, hydromechanical and geotechnical engineering, grouting and construction.

The panel, finalised in December, was introduced to the full scope of the multiphased, multibillion-rand project, and met with LHDA CEO **Refiloe Tlali** and the Lesotho Highlands Water Commission before embarking on a site visit to Polihali.

This follows the formal site handover to the Wilson Bayley Holmes-Ovcon (WBHO)/LSP Construction joint venture (JV) at the Polihali and Katse village for civils works, which include earthworks and the creation of platforms for buildings, water and wastewater systems, landfill, roads and drainage, as well as electrical and telecommunications networks.

The LHDA has also engaged an environmental panel of experts to review social and environmental activities to ensure that its implementation of social, environmental and public health programmes are held to internationally recognised standards.

Key Contracts and Suppliers

To date, several contracts have been awarded for various elements of the advance infrastructure works. These include:

Contract 3004: Professional services for the planning, design and construction supervision of the Polihali western access road (PWAR).

The LHDA awarded the contract to AECOM SA, together with Lesotho-based subconsultants AECOM Lesotho and RWB Consulting Engineers, in August 2016. The tenders for the construction of the PWAR were advertised in the second quarter of 2018.

Contract 3008: Professional services for the bulk power supply and telecommunications.

The contract was awarded in August 2016 to Plantech-SM JV. The procurement of the contractors for the construction and relocation of power lines is under way.

Contract 3006: Professional services for the design and construction supervision of Polihali dam and appurtenant works.

The contract was awarded in June 2017 to AECOM SA (South Africa) with subconsultants: AECOM Lesotho, RWB Consulting Engineers (Lesotho).

Contract 3007: professional services for design and construction supervision of the Polihali transfer tunnel.

The contract was awarded in December 2017 to the Matla a Metsi JV. Partners are Mott MacDonald Africa (South Africa), GIBB (South Africa), Tractebel Engineering SA Coyne et Bellier (France), LYMA Consulting Engineers (Lesotho).

Contract 3009: Professional services for the planning, design and construction supervision of housing and associated infrastructure.

The contract was awarded in June 2015 to Polihali Infrastructure Consultants – a JV comprising South Africa-based engineering consultancy Mott MacDonald and Lesotho-based Khatleli Tomane Moteane. The evaluation of the tenders for the construction of the infrastructure civil works (this includes roads, water and wastewater systems, electricity and telecoms supply) is nearing completion. It will be followed by the advertising of the tender for the construction of houses, the lodge and operation centre.

Contract 3010: Professional Services for the Phase II hydropower feasibility (further studies).

The contract was awarded in March 2017 to MWH UK.

Contract 3013: A Lidar survey and aerial photography of the Mohale



and Katse reservoir areas, powerline corridor and the Polihali dam inundation area.

The contract was awarded in November 2017 to Southern Mapping Geospatial (South Africa).

Contract 3014: Professional services for the design and construction supervision of the Polihali north-east access road.

The contract has been awarded to the Sinohydro/Nthane Brothers JV.

Contract 3015: Professional services for the evaluation, optimisation and site supervision of geotechnical investigations.

The contract was awarded in May 2015 to consultant Jeffares & Green (now called JG Afrika) and Lesotho-based GWC Consulting Engineers.

Contract 3017: Professional Services for the demarcation of the Polihali reservoir.

This entailed the construction of more than 1 300 beacons to mark the 230 km perimeter of the reservoir.

The contract was awarded in April 2015 to Lesotho-based consultancy Maleka, Ntshihlele, Putsoa JV.

The reservoir demarcation was completed in December 2015.

Contract 3020: Design and supervision of the construction of the major bridges to be built.

Aurecon Lesotho has been appointed to design and supervise the construction of the bridges. The project also includes the realignment of the A1 national road in the vicinity of the bridges. Lesotho-based White Life Consultants and Leporogo Specialist Engineers of South Africa are subconsultants.

Contract 3022: Professional services for the design and supervision of the Polihali diversion tunnels.

The contract was awarded in October 2016 to MSKC JV. The procurement of the contractors for the construction of the diversion tunnel started in the last quarter of 2017 and the tender closed in January 2018.

Contract 4005B: Construction of 33 kV line from Tlokoeng to Polihali and relocation of the 33 kV line along the A1.

The contract was awarded in March 2019 to LSP Construction (Lesotho). Subcontractors: – Dihlase Consulting Engineers (South Africa) – Van den Ende & Associates Consulting Engineers (South Africa) – NC Nelson Projects (South Africa) – Fibre Based Integrations (South Africa).

Contract 4012: Construction of the Polihali north-east access road.

The contract was awarded in 24 October 2018 to the Sinohydro SA (South Africa) /Nthane Brothers (Lesotho) JV.

Contract 4023: Design, supply and installation of temporary offices and accommodation units.

The contract was awarded in August 2018 to Senqu – Hiway JV. The JV partners are Senqu Construction Services (Lesotho), HiWay Parkhome and Container Services (South Africa) subcontractor: Electromech Engineering Solutions.

Contract 4016: Geotechnical investigation works for the Polihali dam and Polihali–Katse transfer tunnel.

The contract was awarded to geotechnical drilling company Diabor in November 2015. The investigations will take place in two stages: the first was completed early in 2017 and the second is under way, following the appointment of the dam engineer in late June 2017.

Contract 6004: Professional services for the environmental- and social-impact assessment for the Polihali western access corridor (PWAC).

The contract was awarded in October 2016 to a JV comprising Environmental Resources Management (ERM) Southern Africa and Lesotho-based Sechaba Consultants. In March 2018, the Lesotho Ministry of Tourism, Environment and Culture issued the LHDA with a Record of Decision comprising environmental authorisation for the proposed PWAC, following the completion of the PWAC ESIA and the associated environmental management plan, effectively granting environmental authorisation to proceed with the PWAC construction activities.

Contract 6006: Professional services for resettlement planning and implementation: PWAC.

The contract was awarded in October 2016 to Environmental Resources Management Southern Africa (South Africa). The subconsultants comprise Sechaba Consultants (Lesotho), AVISENSE Consulting (South Africa), Morija Museum and Archives (Lesotho), Hugo Pinto Archaeological Services (South Africa), Geocline Consulting (South Africa), Visual Resources Management (South Africa), Wetland Consulting Services (South Africa).

Contract 6010: Professional services for the development of a Phase II safety, environment and quality management framework.

The contract was awarded in October 2016 to Rori Management Consultancy (Lesotho).

Contract 6014: Professional services for the ESIA for the Polihali reservoir and associated infrastructure.

The contract was awarded in August 2016 to a JV comprising ERM Southern Africa (South Africa) and Lesotho-based Sechaba Consultants (Lesotho).

Contract 6015: Professional services for the resettlement planning and implementation of the Polihali site establishment and reservoir area.

The contract was awarded to the LIMA Thaha JV in September 2016.

Contract 6023: Professional services for the safety, health, environment and quality management audits for Phase II advance infrastructure works.

The contract was awarded in October 2018 to GA Environment (South Africa).

Contract 6025: Professional services for the development and implementation of a cultural heritage plan.

The contract was awarded to PGS Heritage in December 2017.

Contract 9004: Professional services for services relating to principal controlled insurance.

The contract was awarded to Aon Lesotho in November 2017.

Contract 6032: Safety, health, environment and quality auditors for the advance infrastructure of Phase II.

The contract was awarded to GA Environment in November 2018.

Contract 4018A: Advance infrastructure construction at Polihali and Katse.

The contract was awarded to the WBHO and LSP Construction JV in November 2018.

The registration of the assets of the households affected by the advanced infrastructure is under way.

The advance infrastructure will be largely completed before the start of the main works in 2020.

On Budget and on Time?

Too early to state.

Contact Details for Project Information

LHDA public relations manager **Masilo Phakoe**,
tel +266 62857272 or email phakoem@lhda.org.ls.



- Coal
- Diamonds
- Gold
- Other Mining Sectors
- Platinum



Source: Creamer Media

Coal



Even as coal's share of the global energy mix continues to decline, it remains the world's and South Africa's largest source of electricity.

South Africa's State-owned power utility Eskom is the main user of coal and buys about half of what is produced by local coal miners every year. In the 2017/18 financial year, the company bought 115.25-million tons of coal.

As a result, coal and heavy minerals mining company Exxaro is expanding some of its coal mining operations to cater for Eskom's insatiable coal needs and building a new coal mining operation to service a proposed 600 MW independent power producer.

Meanwhile, international integrated chemicals and energy company Sasol is developing Impumelelo, in Mpumalanga, which will replace the old Brandspruit mine and produce coal for the Sasol Synfuels plant.

Also in Mpumalanga, mining and metals company South32 is extending the life of its Klipspruit project to unlock the 616-million-tonne resource at the Klipspruit South and Weltevreden deposits.



Source: Creamer Media



Exxaro's Belfast implementation project

Name of the Project

Belfast implementation project (BIP).

Location

Mpumalanga, South Africa.

Project Owner/s

Exxaro Resources.

Project Description

The BIP contains measured mineral resources of 83-million tonnes. The first phase of the proposed project entails the development of a new greenfield openpit coal mine, including a coal handling and preparation plant, supporting infrastructure and services. The project will have a 17-year life-of-mine and will produce an estimated 2.7-million tonnes of A-grade thermal coal a year.

Potential Job Creation

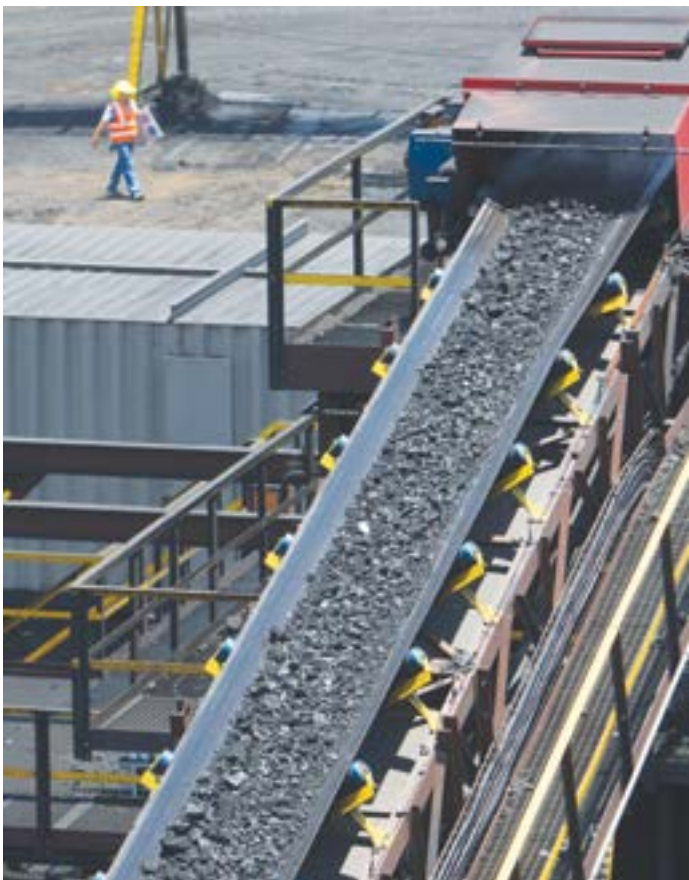
The project will create about 6 000 direct and indirect jobs during construction and operation over its mine life.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

Exxaro plans to spend R3.3-billion on building the mine.



Planned Start/End Date

First production is expected in the first half of 2019.

Latest Developments

The BIP is ahead of schedule.

Exxaro Resources hit the 95% completion mark for its resettlement action plan (RAP) and grave relocation plan (GRP) in January, four months ahead of schedule.

Exxaro has spent R71-million on the RAP to date, which equates to a R2.2-million investment in each of the affected 32 households. The mining organisation has also donated close to 300 ha to the community, who will have security of tenure under a communal property association administered by the Department of Rural Development and Land Reform.

The closely-linked RAP and GRP took almost five years to complete. The Phumlanzi investment excludes a livelihood restoration plan and associated initiatives.

Key Contractors and Suppliers

DRA (detailed engineering design, fabrication, construction and commissioning of a 500 t/h coal processing project, including a two-stage dense-medium beneficiation plant, a fine-coal dense-medium section for fines treatment and a system for the filtration of slimes, as well as associated product handling systems); Arup (detailed engineering design and construction monitoring of all related infrastructure and services); Concor Infrastructure (construction of all related infrastructure and services); Zest WEG Group (construction of bulk electrical works); Tyriss Construction (construction of all buildings); MMD Africa (detailed engineering design, fabrication, construction and commissioning of the run-of-mine sizing station, including primary and secondary sizers); Epoch Resources (detailed engineering design and construction monitoring of the discard disposal facility); Jodan Construction (construction of the discard disposal facility); GroundTruth (detailed engineering design and construction monitoring of wetland rehabilitation interventions); RCE (detailed engineering design and construction monitoring of the new railway siding); Jodan Construction (construction of the new railway siding); Aurecon (detailed engineering design and construction monitoring of the small-scale agricultural village, which forms part of the project's resettlement programme for the relocation of households directly affected by future mining operations); and Motheo Construction (construction of the small-scale agricultural village).

On Budget and on Time?

The project is well within budget and schedule.

Contact Details for Project Information

Exxaro Resources Mpumalanga area GM **Bram van Stelten**, email bram.vanstelten@exxaro.com.

Exxaro Resources strategy and stakeholder engagement executive head **Mzila Mthenjane**, tel +27 12 307 7393 or email investorrelations@exxaro.com.



Exxaro's Grootegeluk 6 expansion project

Name of the Project

Grootegeluk 6 expansion project

Location

Limpopo, South Africa.

Project Owner/s

Exxaro Resources.

Project Description

The project entails the expansion of the existing Grootegeluk 2 plant to enable the production of 1.7-million-tonne-a-year to 2.7-million-tonne-a-year semisoft coking coal.

Potential Job Creation

Up to 2 000 contract positions at peak construction. About 100 permanent positions once the plant is in operation.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

R4.8-billion.

Planned Start/End Date

First production is expected in the second half of 2019, with full production expected by the end of 2020.

Latest Developments

Construction is continuing at the project.

Key Contracts and Suppliers

SMEI, Stefstocks Joint Venture, thyssenkrupp.

On Budget and on Time?

Yes.

Contact Details for Project Information

Exxaro Resources strategy and stakeholder engagement executive head **Mzila Mthenjane**, tel +27 12 307 7393 or email investorrelations@exxaro.com.



Source: Creamer Media



Exxaro's Leeuwan life expansion project

Name of the Project

Leeuwan life expansion (LIFEX) project.

Location

Mpumalanga, South Africa.

Project Owner/s

Exxaro Resources.

Project Description

The Leeuwan LIFEX optimisation project contains measured mineral resources of 54.8-million tonnes and 3.7-million tonnes in the inferred category.

The proposed project entails the development of an openpit coal mine, with a ten-year life-of-mine to produce an estimated 2.7-million tonnes a year of thermal coal for the domestic and export markets.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

The cost of the project has increased from R522-million to R609-million.

Planned Start/End Date

First production was expected in the second half of 2018, with project close expected in the second quarter of this year.

Latest Developments

The project is ahead of schedule.

Key Contractors and Suppliers

Plantcor (boxcut development to a steady state for mining), JG Afrika (design of provincial and secondary roads) and Jodan Construction (construction of R50 provincial and TCM roads).

On Budget and on Time?

Not stated.

Contact Details for Project Information

Exxaro Resources Mpumalanga area GM **Bram van Stelten**, email bram.vanstelten@exxaro.com.

Exxaro Resources strategy and stakeholder engagement executive head **Mzila Mthenjane**, tel +27 12 307 7393 or email investorrelations@exxaro.com.





Exxaro's Thabametsi coal mine – Phase 1 project

Name of the Project

Thabametsi coal mine – Phase 1 project.

Location

Limpopo, South Africa.

Client

Exxaro Coal.

Project Description

The Thabametsi project has proven and probable reserves of 130-million tonnes.

The proposed opencast greenfield mine is expected to produce an average of 3.9-million tonnes a year in power station coal for the estimated 600 MW Thabametsi independent power producer (IPP) coal-fired power plant. The IPP is a preferred bidder under the Department of Energy's (DoE) Coal Baseload IPP Procurement Programme (CBIPPPP).

Thabametsi coal mine has a mine life of more than 30 years.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

Not stated.

Value

Phase 1 will be developed at an estimated cost of R3.2-billion.

Duration

Not stated.

Latest Developments

The DoE's CBIPPPP and the draft integrated resource plan 2018 is still to be finalised.

Key Contracts and Suppliers

None stated.

On Budget and on Time?

Not stated.

Contact Details for Project Information

Exxaro Resources strategy and stakeholder engagement executive head **Mzila Mthenjane**, tel +27 12 307 7393 or email investorrelations@exxaro.com.



Source: Creamer Media



Sasol's Impumelelo replacement coal project

Name of the Project

Impumelelo replacement coal project.

Location

Mpumalanga, South Africa.

Project Owner/s

Sasol.

Project Description

The move to develop the mine forms part of what Sasol has previously described as an "intense capital replacement" programme involving four significant projects – Thubelisha, Impumelelo, Shondoni and Tweedraai – which will replace the long-serving Twistdraai, Brandspruit, Middelbult and part of the Syferfontein operations respectively.

Impumelelo will replace the old Brandspruit mine and produce coal for the Sasol Synfuels plant.

The project involves the construction of a new 8.5-million-ton-a-year coal mine, upgradeable to 10.5-million tons a year.

The No 4 and No 2 coal seams will be mined simultaneously at the project, with the thinner and more complex No 2 seam lying below the No 4 seam. The final shaft depth will be about 225 m below the surface.

The project includes the development of service, ventilation and decline shafts, materials handling systems (including a 28 km overland conveyor, surface surge bunkers, underground conveyors and surge bins) and all the mine infrastructure needed to support operations.

The 11.7-m-diameter men-and-materials shaft will be 210 m deep, with a four-sided station on the No 4 seam.

The 6.7-m-diameter ventilation shaft will also be sunk to 210 m, with access through the four-sided station to the coal production sections.

The shaft complex has been designed to operate for a minimum period of 35 years.

The conveyor system will deliver coal to the Synfuels complex, becoming the longest conveyor system of its kind in the southern hemisphere.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

The project is estimated at R4.6-billion.

Impumelelo forms part of Sasol's strategic R14-billion mine replacement programme, which will ensure uninterrupted coal supply to Secunda Synfuels Operations to support Sasol's strategy to operate its Southern Africa facilities until 2050.

Planned Start/End Date

Phase 1 of the Brandspruit replacement project was completed in June 2016.

Phase 2 is expected to be completed in 2019.

Latest Developments

Mining Weekly reported in October last year that the replacement project will be completed by June this year.

Key Contracts and Suppliers

RSV Enco-Goba coal joint venture, or JV (engineering, procurement and construction (EPC) management implementation); Murray & Roberts Cementation (men-and-materials and ventilation shafts, as well as decline coal seam development on the No 2 and 4 seams); Concor Civils (subcontracted to provide temporary civil works for sinking and development); ELB Engineering Services (EPC – materials handling conveyor); Veyance Technologies (manufacture and delivery of steel cord conveyor belting); Cascade Logistics (transportation of belt rolls); Goodyear Engineered Products (cover compound); Flexco (manufacture and delivery of a new vertical belt reeler), and Redpath and Atlas Copco (reaming of ventilation shafts).

On Budget and on Time?

Yes.

Contact Details for Project Information

Sasol group media manager **Alex Anderson**, tel +27 71 600 9605 or email alex.anderson@sasol.com.





South32's Klipspruit life extension project

Name of the Project

Klipspruit life extension (KPSX) project.

Location

Mpumalanga, South Africa.

Project Owner/s

South32 owns 92% of South Africa Energy Coal, with the remaining 8% held by a broad-based black economic empowerment consortium.

Project Description

The brownfield KPSX project will unlock the 616-million-tonne resource at the Klipspruit South and Weltevreden deposits.

The project will be a contract miner operation using existing infrastructure, ramping up to an average of eight-million tonnes a year of saleable export thermal coal production from three opencut pits – Klipspruit South, Pit BD and Pit H.

The project is expected to increase the life of the Klipspruit colliery by more than 20 years.

Potential Job Creation

The project is expected to ensure employment for 740 people and create 4 000 jobs during construction.

Net Present Value/Internal Rate of Return

The investment is expected to generate an internal rate of return of more than 20%.

Capital Expenditure

R4.3-billion.

Planned Start/End Date

The project was approved in November 2017 and expected to start production in 2019.

Latest Developments

South32 reported in its results for the six months ended December 31, 2018, released in February this year that the project was about 33% complete, with first production expected in the second half of the 2019 financial year.

In the six months to December 31, the Klipspruit colliery dragline outage, which resulted in 9% less saleable South Africa Energy Coal production at 12.2-million tonnes, turned out to have a silver lining, as the repair of the dragline highlighted its potential to be in a rehabilitation role or in the KPSX project, which was originally predicated on truck-and-shovel mining.

Major expenditure in KPSX of \$140-million is expected in 2019.

Key Contracts and Suppliers

None stated.

On Budget and on Time?

The project remains on schedule and budget.

Contact Details for Project Information

South32, tel +27 11 376 2000.



Diamonds



Most of the high-economic value diamond deposits in the world have been put into production or have even been depleted. As a result, many mining companies are choosing to expand their existing mines.

De Beers Consolidated Mines is currently building a new underground mining operation beneath the current operating openpit at the Venetia mine, in Limpopo, South Africa – it is the largest diamond mine development under way anywhere in the world.

Petra Diamonds is expanding the Cullinan mine, in Gauteng, South Africa, through its Cullinan C-Cut project, which will treat between 3.7-million and 4-million carats a year by the 2019 financial year.



Source: Bloomberg



De Beers' Venetia underground project

Name of the Project

Venetia underground project (VUP).

Location

Limpopo, South Africa.

Project Owner/s

De Beers Consolidated Mines (DBCM), part of the De Beers Group, a subsidiary of Anglo American.

Project Description

The Venetia mine, which officially opened on August 14, 1992, is currently the largest producer of diamonds in South Africa.

The mine is currently an openpit operation; however, following shareholder approval, development work began in late 2013 to build the new underground mining operation beneath the current operating openpit. It is currently the largest diamond mine development under way anywhere in the world.

The new underground mine will extend the life of Venetia mine to beyond 2040 and replace the openpit production from 2023, meaning Venetia will remain South Africa's largest diamond mine.

Potential Job Creation

During the VUP construction period, employment will peak at about 2 000. There are currently 1 300 people working on the VUP, and the workforce is predicted to number around 2 000 from late 2020 through to late 2021.

Net Present Value/Internal Rate of Return

Not stated.



Source: Creamer Media

Capital Expenditure

De Beers stated in 2012 that it expected to invest about \$2-billion in the VUP to 2023, when the conversion from openpit to underground and the production of first ore are expected to begin.

Planned Start/End Date

The underground operation is expected to deliver first production at Venetia during 2022.

Latest Developments

De Beers reported in its production report for the fourth quarter of 2018, released in February this year, production guidance of between 31-million carats to 33-million carats, subject to trading conditions.

The lower production is driven by the process of exiting from the Venetia openpit with the underground becoming the principal source of ore from 2023.

Key Contracts and Suppliers

Murray & Roberts (M&R) Cementation (development of underground mine); WorleyParsons, Stefanutti & Stocks, BBE, Sandvik; and ABB are among the contractors involved in the project.

On Budget and on Time?

The project is on schedule to produce its first diamonds in 2022.

Contact Details for Project Information

DBCM communications senior manager **Jackie Mapiloko**, tel +27 11 374 7173 or email jackie.mapiloko@debeersgroup.com.



Petra Diamonds' Cullinan C-Cut Phase 1 expansion programme

Name of the Project

Cullinan C-Cut Phase 1 expansion programme

Location

Gauteng, South Africa

Project Owner/s

Petra Diamonds (74%), Kago Diamonds (14%) and the Itumeleng Petra Diamonds Employee Share Trust (12%).

Project Description

The Cullinan Diamond mine is renowned as a source of large, high-quality gem diamonds, including Type II stones and the world's most important source of very rare blue diamonds.

As at June 30, 2018, the Cullinan mine contained a world-class gross resource base of 190.3-million carats (including 17.3-million carats in tailings), suggesting it could operate significantly longer than the current mine plan to 2030.

The C-Cut Phase 1 project plans to capitalise on the mine's resource base. The C-Cut Phase 1 project is planned to contribute an estimated three-million tonnes in the 2019 financial year. A further 700 000 t to one-million tonnes will be sourced predominantly from the CC1E mining area as well as from other B Block tonnes.

Production from the C-Cut cave has been largely concentrated in the south-western area, which covers about 25% of the C-Cut footprint and has produced 75% of the ore to date.

In the 2018 financial year, Cullinan contributed 34% of Petra's total carat volume, with the new mining blocks, including the C-Cut and the CC1 East, contributing 72% of the mine's carats.

The current 12-year mine plan will only exploit about 17% of the total indicated resource by volume.

Capital Expenditure

Not stated.

Planned Start/End Date

Not stated.

Latest Developments

Cullinan's run-of-mine (RoM) diamond production increased 30% to 785 444 ct in the first half of the 2019 financial year, from 602 594 ct in the first half of the 2018 financial year. This is owing to a 12% increase in RoM treated to 1.996-million tonnes, from 1.783-million tonnes in the first half the 2018 financial year, as well as an increase in the RoM grade of 16% to 39.3 carats per hundred tonnes, or cpht, from 33.8 cpht in the first half of the 2018 financial year. This increase in volume and grade is a result of the continued ramp-up of production from the C-Cut Phase 1 and a reduction in ore mined from old areas with higher waste dilution.

The third and final underground crusher was commissioned in December 2018, delivering increased operational flexibility as mining progresses across the footprint of the cave. Draw-bell installations across the C-Cut orebody are planned to be completed by September 2019 and will require six to nine months to reach maturity.

The shaft and plant interface at the Cullinan mine are expected to be completed in the first half of the 2020 financial year.

Further, the new Cullinan plant is fully operational, meeting design parameters while normal optimisation is ongoing and has a capacity of six-million tonnes a year, comprising four-million tonnes a year RoM and two-million tonnes a year of tailings.

In March 2019, three unique diamonds were recovered from the Cullinan mine, demonstrating the prevalence of these types of stones in the Cullinan orebody and the ability of the plant to recover them.

On Budget and on Time?

The project is progressing well and in line with expectations.

Contact Details for Project Information

Petra Diamonds, email investorrelations@petradiamonds.com.



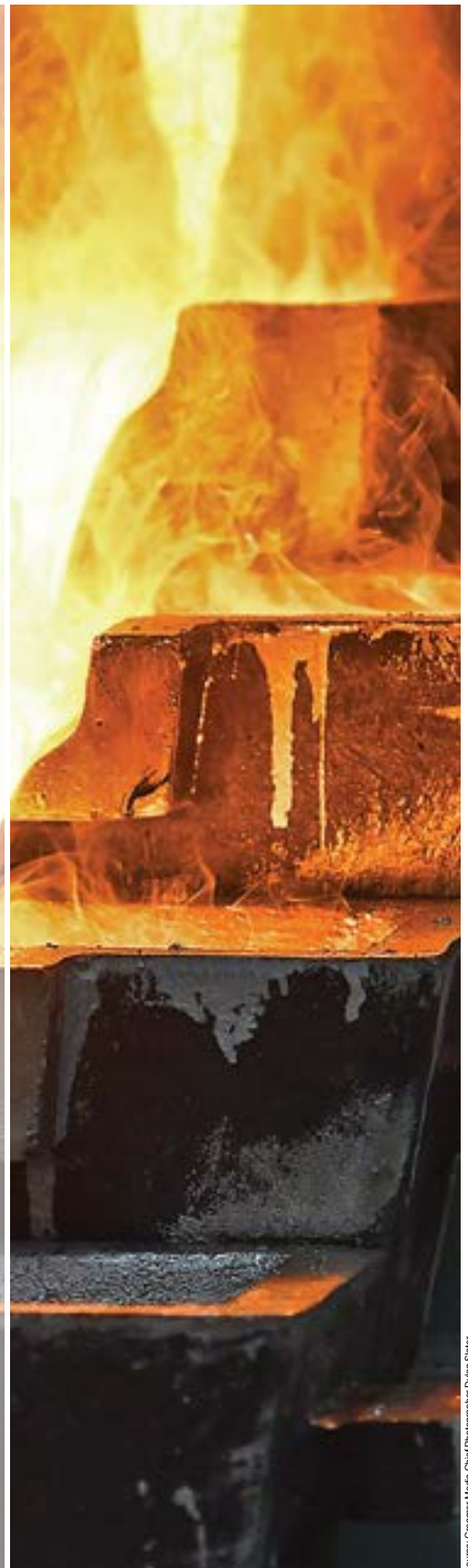
Gold



In a sector beset by protracted industrial action, a lack of new discoveries and investment, as well as deeper and declining orebodies, gold tailings retreatment operations have demonstrated better resilience and attracted more investor interest than traditional operations, 71% of which were either marginal or lossmaking in 2018, according to Minerals Council South Africa.

While tailings retreatment is far from being a panacea for the gold industry, the significant gains realised by retreating existing tailings dams cannot be understated. Current innovative technologies and processing techniques have significantly increased the extraction potential from tailings dams, and these can now be effectively mined and processed.

One miner that is exploiting this untapped resource is midtier Africa-focused gold producer Pan African Resources, which recently commissioned the 1.2-million-tonne-a-month Elikhulu tailings retreatment plant (ETRP), in Mpumalanga, South Africa. The ETRP is expected to produce about of 70 000 oz/y of gold.



Source: Creamer Media Chief Photographer Dylan Slater



Pan African Resources' Elikhulu tailings retreatment plant project

Name of the Project

Elikhulu tailings retreatment plant project.

Location

The project is located at Evander mines, in Mpumalanga, South Africa.

Client

Pan African Resources and Evander Gold Mines.

Project Description

The Elikhulu tailings plant project entailed establishing facilities and infrastructure at Evander Gold Mines to re-treat gold plant tailings at one-million tonnes a month. This is in addition to the existing production from the Evander tailings retreatment plant (ETRP), which has been incorporated into the Elikhulu plant, and which processed about 200 000 t/m of tailings.

The enlarged plant is forecast to process throughput of 1.2-million tonnes a month and to produce about 70 000 oz/y of gold.

The Elikhulu project uses a conventional carbon-in-leach circuit with an additional preoxidation process.

The Elikhulu project has an expected life-of-mine (LoM) of 13 years.

Potential Job Creation

Elikhulu's construction phase employed more than 1 700 people and will directly employ more than 400 permanent employees and contractors during its LoM.

Value

The initial project capital for Elikhulu is estimated at R1.74-billion.

Duration

The project broke ground in August 2017 and had its first gold pour in August 2018.

Latest Developments

Elikhulu contributed 15 292 oz in its first four months of operation and reached its nameplate capacity of one-million tonnes throughput in October 2018. The ETRP has now successfully been incorporated into Elikhulu.

Elikhulu operations manager **Oriel Shikwambana** has pointed out that the retreatment of the three slimes dams, Kinross, Leslie/Bracken and Winkelhaak, will result in reduced environmental liability as the tailings will be deposited on one large tailings storage facility (TSF) site.

"In light of [the tailings dam failure earlier this year] in Brazil, Pan African Resources is commissioning an audit on dormant and active tailings sites.

"The TSFs are not designed to fail, we have never had a failure and we have stringent monitoring systems in place," Pan African Resources CEO **Cobus Loots** has said.

The company has also reviewed hard-rock mining safety.

Key Contracts and Suppliers

DRA Projects (feasibility study, detailed design and construction supervision service) and Fraser Alexander (remining contract).

On Budget and on Time?

The Elikhulu project was completed ahead of schedule and is expected to be within the project budget of R1.74-billion.

Contact Details for Project Information

Pan African Resources project lead **Jonathan Irons**, tel +27 11 243 2900 or fax +27 11 880 1240.

Aprio Strategic Communications public and investor relations on behalf of Pan African Resources, **Julian Gwillim**, tel +27 11 880 0037.



Source: Pan African Resources

Other Mining Sectors



South Africa's Northern Cape province, where Vedanta Zinc International's Gamsberg mine and plant are located, boasts one of the largest-known and undeveloped zinc orebodies in the world.

The mine, which was recently inaugurated by South African President **Cyril Ramaphosa**, has reserves and resources of more than 214-million tonnes at a grade of 6% to 6.5% zinc and an estimated life-of-mine (LoM) of more than 30 years.

Phase 1 of the mine involved an investment of \$400-million and will result in four-million tonnes a year of ore produced from the openpit and 250 000 t/y of concentrate from its concentrator plant over a LoM of 13 years.

The investments that have already been made in the project, when taken together with the anticipated investments in further phases, will improve South Africa's position as a global player in zinc production and will change the economic landscape of the region and contribute to much-needed social development.



Source: Creamer Media Chief Photographer Dylan Slater



Vedanta Zinc International's Gamsberg mine and plant

Name of Project

Gamsberg mine and plant.

Location

Gamsberg, near Aggeneys, Northern Cape, South Africa.

Project Owner/s

Vedanta Zinc International (VZI) is a grouping of zinc assets located mainly in South Africa and Namibia, owned by India-based Vedanta Resources.

Operations include:

- Black Mountain Mining (BMM) and the associated flagship Gamsberg project, in South Africa;
- the Skorpion Zinc mine and refinery, in the Karas region of Namibia; and
- the Lisheen mine, in Ireland, currently in active closure mode, with mining and milling concluded in December 2015 after 17 years of operation.

VZI aims to create an integrated world-class regional zinc complex comprising BMM (including Gamsberg) and the Skorpion Zinc mining and refining operations.

Project Description

Gamsberg, one of the largest greenfield mining projects in Africa, is being developed on one of the world's largest-known, but as yet undeveloped, zinc deposits.

The project's current reserve and resource is 214-million tonnes, with a grade of between 6% and 6.5%, and an estimated life-of-mine (LoM) of 30 years.

Phase 1 has an LoM of 13 years and will result in four-million tonnes a year of ore produced from the openpit and 250 000 t/y of concentrate from its concentrator plant.

Phase 2 will increase ore mined to eight-million tonnes a year and production of zinc-in-concentrate to 450 000 t/y.

Phase 3, which is expected to start in 2025, will result in this increasing to 600 000 t/y.

Studies on Phase 2 and 3 are under way.

Potential Job Creation

Gamsberg, which has the potential to trigger a new wave of industrial and economic development in the Northern Cape, employed more than 3 000 people during its construction.

For the operational phase, about 750 people are already employed.

Capital Expenditure

Phase 1 of Gamsberg is valued at \$400-million.

Phase 2 is estimated at between \$350-million and \$400-million.

Planned Start/End Date

The LoM of Phase 1 is 13 years.

Latest Developments

President **Cyril Ramaphosa** presided over the official inauguration of Gamsberg on February 28.

The inauguration also celebrated the end of construction and the start of ramp-up, with VZI CEO **Deshnee Naidoo** telling delegates that Gamsberg was now "officially ready for steady-state production".

Gamsberg has the potential to contribute more than \$1-billion of investment into the South African mining industry.

Key Contracts and Suppliers

Aveng Moolmans (bulk mining); ELB Group (concentrator and associated infrastructure); Liviero Civils (tailings dam); Zest WEG Group, including Shaw Controls (upgrade of municipal supply station providing water for the mine and zinc concentration plant).

On Budget and on Time?

Not stated.

Contact Details for Project Information

R&A Strategic Communications, **Charmane Russell** or **Marika Muller**, tel +27 11 880 3924 or email charmane@rasc.co.za or marika@rasc.co.za.



Source: Vedanta Zinc International

Platinum



Total platinum supply and demand are expected to increase by 5% and 6% to 8.42-million and 7.74-million ounces respectively in 2019, according to the World Investment Council. This means that there will be a 680 000 oz surplus, compared with the prior estimate of 455 000 oz.

Contributing to platinum supply will be South Africa, the world's biggest platinum producer, which, in spite of power disruptions and industrial action, continues to develop its platinum projects in Limpopo and Mpumalanga. This includes Northam Platinum's Booysendal South platinum mine project, which is expected to sustain production at 250 000 oz of refined platinum, palladium, rhodium and gold, or 4E platinum-group metals, for more than 25 years, when it reaches steady state in 2022.



Source: Northam Platinum



Northam Platinum's Booyseendal South platinum mine project

Name of the Project

Booyseendal South platinum mine project.

Location

The project straddles the border of Limpopo and Mpumalanga, in South Africa.

Project Owner/s

Northam Platinum.

Project Description

Booyseendal South incorporates the infrastructure of Aquarius Platinum's former Everest mine.

The acquisition of Everest included a 250 000 t/m concentrator, underground access and equipment, tailings storage, workshops and offices, infrastructure and access to power and water supply.

Northam has installed an aerial rope conveyor system to transport ore from the central portal complex to the Booyseendal South concentrator, almost 5 km away.

The conveyor has a capacity of 1 150 t/h.

Booyseendal South mine will sustain production at 250 000 oz of refined platinum, palladium, rhodium and gold, or 4E platinum-group metals, for more than 25 years.

Potential Job Creation

Currently, Booyseendal South has an estimated 1 800 people

employed on a part time basis. At steady state up, to 2 000 permanent jobs will be available.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

R4.2-billion over a six-year period.

Planned Start/End Date

Steady-state production is expected in 2022.

Latest developments and recent milestones

Construction of Booyseendal South's central mining complex and ancillary infrastructure is well advanced and on track to reach steady state in the 2022 financial year.

Key Contracts and Suppliers

Doppelmayr Transport Technology (Ropecon) and WBHO (Phase 1 contract for the establishment of the Booyseendal South central road and boxcut, and DRA the engineering, procurement and construction management).

On Budget and on Time?

The project is ongoing.

Contact Details for Project Information

Northam Platinum media and investor relations, R&A Strategic Communications, tel +27 11 880 3924.



Source: Northam Platinum



- Central Africa
- East Africa
- Southern Africa
- West Africa





Kore Potash's Kola potash project

Name of the Project

Kola potash project.

Location

The Kola project is located in the Kouilou province of Congo-Brazzaville.

Project Owner's

Kore Potash.

Project Description

The Kola definitive feasibility study (DFS) proposes mining of the Kola sylvinite deposit, and the production of about 2.2-million tons a year of muriate of potash over a 33-year mine life and its export.

The economic model is based on a 23-year mine life.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

The project has an after-tax real net present value, at a 10% discount rate, of \$1.45-billion and a real ungeared internal rate of return of 17%, with a 4.3-year payback from first production.

Capital Expenditure

Preproduction capital is estimated at \$2.1-billion on an engineering, procurement and construction (EPC) management basis.

Planned Start/End Date

The project has an estimated 46-month construction period.

Latest Developments

Kore Potash received an EPC proposal for the Kola project from a consortium after the February 28 deadline for proposals.

The late proposal was submitted by a French consortium of companies, comprising Technip France, Vinci Construction Grands Projets, Egis International and Louis Dreyfus Armateurs. Kore, nevertheless, has said that it will consider all options for the development of Kola.

Key Contracts and Suppliers

Technip France, Vinci Construction Grands Projets, Egis International and Louis Dreyfus Armateurs (DFS); Met-Chem DRA Global and AMC Consulting (specialist subconsulting); Met-Chem DRA Global (mineral resource estimate); SRK Consulting (environmental- and social-impact assessment); and Jukes Todd, Hatch and Wood PLC (reviews of the final draft DFS).

On Budget and on Time?

Too early to state.

Contact Details for Project Information

Kore Potash, tel +27 11 460 9140.

Tavistock on behalf of Kore Potash, tel +44207920 3150 or email kore@tavistock.co.uk.



Source: Bloomberg



Battery Minerals' Balama Central graphite project

Name of the Project

Balama Central graphite project.

Location

The project is located in the province of Cabo Delgado, in northern Mozambique.

Client

Battery Minerals.

Project Description

A feasibility study has found that Balama Central will generate outstanding returns.

The project has a maiden reserve of 19.66-million tonnes grading 11.06% total graphitic carbon (TGC) for 2.2-million tonnes of contained graphite and total mineral resources of 32.9-million tonnes grading 10.2% TGC.

Mining will be undertaken using standard truck-and-excavator methods. Drill-and-blast of the fresh material will be required.

The process plant will process run-of-mine ore at an average rate of 480 000 t/y at more than 12.5% TGC to produce 58 000 t/y of dry graphite concentrate, with a grade of +96% TGC, over a 27-year life-of-mine (LoM).

The processed tailings will be deposited in a tailings storage facility (TSF) with a basin footprint of 180 ha.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

The project has a pretax internal rate of return of 55%, with a payback 2.3 years.

Value

Capital expenditure (capex) is estimated at \$69.43-million.

Duration

Not stated.

Latest Developments

Battery Minerals expects to develop Balama Central after its first Mozambique graphite project, Montepuez, is commissioned.

Key Contracts and Suppliers

Mitchell Drilling Contractors Mozambique (resource drilling); RPM Global (feasibility study resource estimation); Snowden (resource to reserve estimation and LoM design and scheduling, mine geotechnical study, mine layout and design, and mine design); WRP Consultants (surface hydrology study); LADP (graphite product metallurgical assessment, nonprocess plant infrastructure, process plant design and plant capex and operating expenditure estimates); Epoch (design and assessment of the TSF and water storage facility).

On Budget and on Time?

Not stated.

Contact Details for Project Information

Battery Minerals, tel +258 214 937 35 or email info@batteryminerals.com.



Source: Battery Minerals



Kibo Energy's Mabesekwa coal independent power producer project

Name of the Project

Mabesekwa coal independent power producer project.

Location

The project is located about 50 km south-east of Botswana's second-largest city, Francistown.

Project Owner/s

Kibo Energy.

Project Description

Mabesekwa is envisaged as a coal-based integrated mine-mouth power plant with the potential to incorporate a solar component.

It currently comprises a 303-million-tonne South African Code for the Reporting of Mineral Resources and Mineral Reserves-compliant coal resource, with water- and land-use permits and environmental certification in place.

Scoping and prefeasibility studies on the coal mine envision a power plant with a maximum capacity of 600 MW (4×150 MW) based on a coal delivery rate of 3.2-million tonnes a year and a life-of-mine of more than 30 years.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

Not stated.

Capital Expenditure

Not stated.

Planned Start/End Date

Not stated.

Latest Developments

The project is currently at feasibility stage following the completion of the scoping study.

The mining licence for the project is still outstanding, but is "on a clear development path with visible deliverables that will, when reached, increase the inherent value of the project", Kibo Energy CEO **Louis Coetzee** has said.

Key Contracts and Suppliers

None stated.

On Budget and on Time?

Not stated.

Contact Details for Project Information

Kibo Energy, tel +353 91 511463, fax +353 91 511463 or email info@kibo.energy.





Thor Explorations' Segilola gold project

Name of the Project

Segilola gold project.

Location

Nigeria.

Client

Thor Explorations.

Project Description

A definitive feasibility study on Segilola has proposed the construction of an openpit mine, which will include the construction of a new 625 000 t/y processing plant that will comprise a conventional crushing circuit, two-stage grinding, gravity, carbon-in-leach, elution, electrowinning and smelting to produce gold doré.

Production is estimated at 80 000 oz/y over the life-of-mine (LoM).

The project has an initial five-year LoM.

The project has probable mineral reserves of three-million tonnes grading at 4.2 g/t gold.

A preliminary economic assessment (PEA) has also been undertaken for a proposed supplemental underground project at Segilola.

The PEA envisages an initial three-year underground operation, which can be brought on line during the openpit LoM to supplement the openpit ore with high-grade underground production. The deposit remains open below the resources considered in the underground project.

Underground production is estimated at 33 000 oz/y.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

The Segilola openpit has a pretax net present value (NPV), at a 5% discount rate, of \$138-million and an after-tax internal rate of return of 50%, with an after-tax payback of 1.4 years on initial capital.

The Segilola underground project has a pretax NPV, at a 5% discount rate, of \$35-million.

Value

The Segilola openpit has an estimated preproduction capital expenditure of \$87-million.

The underground operation has an estimated development capital expenditure of \$13-million.

Duration

The DFS envisages construction starting in the second quarter of 2019 and an 18-month construction period.

Latest Developments

Thor is at an advanced stage of negotiations with potential project finance lenders.

Key Contracts and Suppliers

None stated.

On Budget and on Time?

Too early to state.

Contact Details for Project Information

Thor Explorations, tel +1 778 373 0102 or email info@thorexpl.com.



Source: Bloomberg



Avenira's Baobab phosphate project

Name of the Project

Baobab phosphate project.

Location

The project is located 140 km east of the capital of Dakar, in Senegal.

Project Owner/s

Avenira.

Project Description

A feasibility study has confirmed the technical and financial robustness of a long-life operation for the Baobab phosphate project.

The project has a probable ore reserve of 39.3-million tonnes grading 18.9% phosphorous pentoxide.

The study is based on an openpit strip-mining design and conventional flotation and magnetic separation ore processing plant, operating at an ore throughput of 2.9-million tonnes a year and a phosphate rock concentrate post ramp-up production rate of one-million tonnes a year.

Strip mining has been determined as the most cost effective and feasible combination for the extraction of ore at the project's Gadde Bissik deposit.

The process plant is designed to separate clay, silica, iron and other minor gangue minerals present in the ore from the phosphate-containing minerals to achieve a phosphate concentrate with maximum assays of 8% silicone dioxide and 1% iron oxide. The plant design target is to produce one-million tonnes a year of concentrate by varying the feed tonnage within the design allowance parameters.

The project's mine life has been estimated at 13.4 years.

Potential Job Creation

Not stated.

Net Present Value/Internal Rate of Return

The project has a pretax unlevered net present value, at an 8% discount rate of \$306-million and an internal rate of return of 29.4%, with a payback of 3.3 years from first production.



Source: Bloomberg



Capital Expenditure

Total preproduction capital expenditure is estimated at \$183.1-million.

Planned Start/End Date

Not stated.

Latest Developments

Avenira is planning a bankable feasibility study for the June quarter of 2019, which will be completed by the December quarter, with the company also hoping to advance discussions with potential funding parties. The final investment decision is targeted for the first half of 2020.

Key Contracts and Suppliers

MPR Geological Consultants (resource estimate); Wood PLC (mining engineering and study, process engineering and infrastructure, and tailings storage facility); Phosphate Beneficiation (metallurgy and process consulting); Mineral Resource Associates (metallurgy and flotation testwork); FLSmidth (comminution, thickening, settling and drying testwork); Mintek (comminution, flotation and granulometry testwork); Greentechnical (bulk solids flow); Mac One Technologies, Roytec Global and FLSmidth (filtration testwork); SGS (analytical services); Outotec and Eriez Manufacturing Co (magnetic separation testwork); Prayon Technologies (phosphoric acid pilot testwork); CRU Consulting (marketing – product price projection); and Avenira and Bentleys (financial model).

On Budget and on Time?

Not stated.

Contact Details for Project Information

Avenira, tel +61 8 9264 7000 or email frontdesk@avenira.com.



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