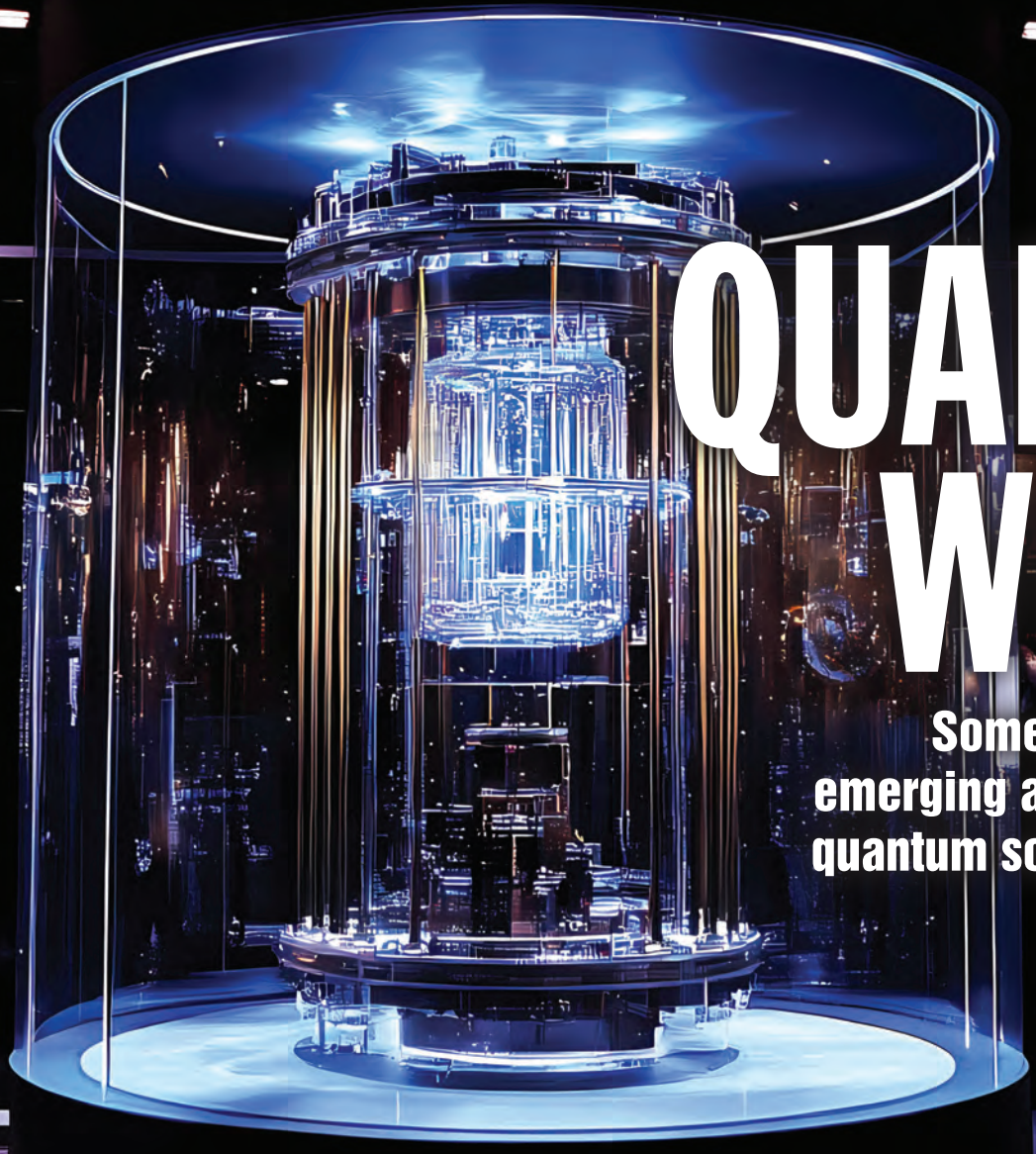
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QUANTUM WORLD

Some real-world prospects emerging as globe marks year of quantum science and technology

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PUSH PAUSE

I spent a lot of time, money and effort childproofing my house . . . but the kids still get in.



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FIRST WORD

Office of Engineer-General must foster much-needed engineering excellence

"It is extremely important that South Africa puts maximum emphasis on the need for our nation to attain the highest levels of engineering excellence. The pressing ahead by Public Works and Infrastructure Deputy Minister **Sihle Zikalala** to set up the Office of the Engineer-General South Africa as soon as possible points to the urgency to bridge regulatory gaps and to uphold engineering standards, particularly at this time when large-scale engineering projects critical to South Africa's economic growth are essential. It also provides an avenue for the private sector to make use of the Public Private Partnership model to its fullest and most inclusive extent. The Office of the Engineer-General South Africa must be used as the lever through which South Africa can ensure a resilient and sustainable infrastructure economy going forward."

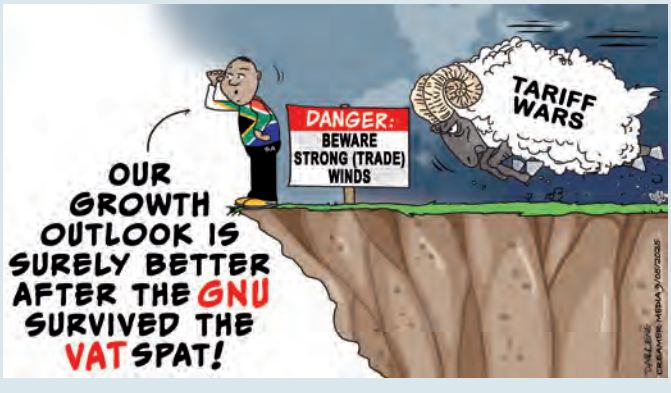


Martin Creamer | Publishing Editor

Scan to listen to Martin Creamer on SAfm

PUSH PAUSE

My mate is always polite and courteous when he builds anything; he's a civil engineer.



NEW PERIL: South Africa was hoping to begin breaking free from its low-growth trap this year. It avoided what would have been another self-inflicted wound by allowing the spat over VAT to break up the Government of National Unity. But the uncertainty created by the tariff wars could well knock us down yet again.

PERSPECTIVES



CUTS TO FISCAL SPARKLE: Botswana is intent on cutting spending to offset the effects of a prolonged downturn in the diamond market, Bloomberg reports. Vice President **Ndaba Gaolathe**, who is also Finance Minister, said some drastic action was needed if Botswana was to live within its means. "That means cutting spending. Cutting expenditure means doing away with what we believe is some of the fat."

"[Africa] must determine . . . [its] own agenda for growth because that is the only way to survive in a world where everyone cares only about themselves."

AFRICAN REFINERS AND DISTRIBUTORS ASSOCIATION PRESIDENT DR MUSTAPHA ABDUL-HAMID

AN



Source: Bloomberg

TARIFF REVIEWS

Unavoidable trade-offs

THE INTERNATIONAL TRADE Administration Commission of South Africa (Itac) has initiated two major tariff reviews that could have significant implications for the country's existing real-economy participants, its green-economy aspirations, as well as for South African consumers and taxpayers.

The first and most ambitious is a review of the steel tariff structure, the scope of which is simply enormous.

It covers the tariffs on steel and stainless steel products included in chapters 72, 73, 82 and 83 of the Customs and Excise Act and involves 609 tariff codes that govern R67-billion of yearly imports. Chapter 72 deals with primary carbon and stainless products such as hot-rolled coil, chapter 73 with articles such as wire and pipes, chapter 82 with tools and cutlery, and chapter 83 with miscellaneous steel products, including such items as padlocks.

In other words, protection levels for every steel and stainless product are being assessed, with potentially far reaching implications for downstream fabricators, as well as primary steel producers.

Both are currently struggling, with the former facing stiff import competition, which could well worsen as US tariff barriers result in a diversion of products directly towards South African markets, or indirectly to markets where South African exports traditionally flow. Upstream, the pressures are such that the longs unit of South Africa's largest steel producer is currently operating only courtesy of an interest-free loan from the State-owned Industrial Development Corporation.

The second review initiated by Itac, meanwhile, involves 82 tariff codes for inputs and materials used in the renewables and battery storage value chains. It includes everything from solar panels and generators for wind turbines, to lithium-ion batteries, aluminium and steel structures and even the screws, bolts and nuts used in wind, solar PV and battery energy storage installations.

This review follows the recent approval by Cabinet of the South African Renewable Energy Masterplan, which outlines government's strategy for stimulating industrial and skills development in key green-economy sectors.

In a different era, both reviews would have come as something of a shock and would probably have been met by howls of protest. Given the antics of the US administration under Trump 2.0, however, the reviews have solid geopolitical cover, as protectionism gains favour once again.

In some ways, this policy space is welcome, as it provides countries with a genuine opportunity to assess their options outside of the strictures that have prevailed more or less continuously since the end of the Cold War; a period that coincided with South Africa's reintegration into the global economy.

That does not mean South Africa should approach its reassessment of trade and industrial policy as if decisions made during this period carry little risk. In reality, the trade-offs are all too real and the choices made will have material implications for the country's investment trajectory, as well as for taxpayers, who will foot any incentives bill, and consumers, who ultimately pay for tariffs.

Itac should, thus, err on the side of extensive consultation and extreme transparency .

Terence Creamer | Editor



FACTSINFIGURES

945

The energy in terawatt hours that data centres worldwide are expected to demand by 2030, according to the International Energy Agency's 'Energy and AI' report.

1.7

The volume in millions of ounces by which palladium demand could rise yearly if new initiatives to expand the metal's use across multiple sectors gain traction.

SHEILA BARRADAS | CREAMER MEDIA RESEARCH COORDINATOR & SENIOR DEPUTY EDITOR

ECONOMY

Behind the Curve

Informal-sector small businesses lagging their formal-sector counterparts – TIPS

TASNEEM BULBULIA | CREAMER MEDIA SENIOR DEPUTY EDITOR ONLINE

Available data suggests that formal small businesses contributed 19% of GDP and 33% of employment in 2023, according to nonprofit organisation Trade and Industrial Policy Strategies' (TIPS's) 'State of Small Businesses in South Africa' report.

The report – a special edition of TIPS's Real Economy Bulletin – summarises the informal available information on the number of small businesses, in total and by industry and province; their contribution to GDP and employment; ownership by race, gender and age; and access to skills and infrastructure.

For the formal sector, it also reviews the available data on the sector's investment and profitability. The analysis is primarily based on household surveys and financial data.

The report shows that the informal sector generated just under 5% of GDP and provided 17% of employment, mostly in the form of own-account workers, who operated micro-enterprises with no other employees.

Formal small employers have seen a decline in both numbers and employment since the 2020 Covid-19 downturn.

In contrast, formal own-account workers and informal businesses have more than recovered, the report finds.

Whites owned 38% of small formal businesses in 2024, although they comprised only 7% of the working-age population.

Fifteen years ago, whites owned 57% of small formal businesses.

African women owned only 13% of small formal businesses in 2024, although they made up 41% of the working-age population.

The median age of formal business owners is 47, ten years more than for waged employees.

Value added by formal-small business reportedly dropped 7% in 2023, presumed to be largely owing to loadshedding and slow overall economic growth.

The small business sector in South Africa has long lagged far behind the small business sectors of other upper middle income countries, the report points out.

Only about 6% of all working-age adults are employers or own-account workers in South Africa, compared with 20% in other upper middle income countries outside of China, and 27% in China.

The largest sectors for small formal business are commercial services and trade, followed by manufacturing.

In the informal sector, trade is far more important, followed by community services and construction, the report outlines.

The median income for formal employers in 2024 was R15 000 a month, compared with R10 000 for the self-employed. The figure was R4 800 for waged workers in small formal business and R6 000 in large businesses.

Median incomes in the informal sector ranged from R5 000 for employers to R2 000 for waged workers and only R1 200 for own-account workers.

In the lowest-income 60% of households, only 8% said earnings from a business formed their most important income source.

In the richest 10% of households, 17% said most of their income came from a business.

Small formal businesses owned around 20% of private formal-sector assets in 2023.



Source: Bloomberg

OPEN-AIR OPERATIONS
Over 30% of informal businesses operate outdoors, including at open markets or taxi ranks, or on sidewalks

In contrast, most indicators suggest informal businesses had almost no assets at all.

In 2024, Gauteng, the Western Cape and KwaZulu-Natal accounted for 74% of formal small businesses, as well as 58% of the working-age population and a similar share of informal businesses.

The number of formal employers has grown steadily only in the Western Cape. The provincial spread of informal business is proportional to the population, the report shows.

Waged workers in small formal business were half as likely to be union members as those in larger companies, with virtually no union members in the informal sector.

Smaller formal businesses were considerably less likely than larger ones to provide retirement or medical aid, or to meet requirements in the Basic Conditions of Employment Act.

In 2024, 22% of formal own-account business owners had graduated from university, up from 17% in 2009.

For formal employers, the share had risen from 13% to 17%. In contrast, only 5% of waged workers in small formal businesses had a degree in 2024.

Under 5% of informal business owners had a degree, and only 30% had at least matric, compared with 55% of their formal counterparts.

According to Statistics South Africa, 50% of informal businesses operated in their own homes in 2023.

Over 30% worked outside (at an open market, taxi rank or sidewalk), 11% in someone else's home, and only 5% in a non-residential building.



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ELECTRICITY & ENERGY

Power Vision

Newly minted electricity department outlines grid and renewables targets to lawmakers

TERENCE CREAMER | CREAMER MEDIA EDITOR

The newly separated Department of Electricity and Energy (DEE) has outlined its vision and mission to lawmakers, listing among its priorities for the coming five years the procurement of 20 GW of new renewables capacity and the addition of 5 044 km of new powerlines.

The department previously operated under the umbrella of the Department of Mineral Resources and Energy, but from April 1 began operating separately from the Department of Mineral and Petroleum Resources, in line with President **Cyril Ramaphosa**'s 2024 proclamation to again separate the two departments.

The DEE has taken up offices at Matimba House, on Visagie Street in Pretoria, where a previous version of the Department of Energy was headquartered before being merged with the mineral resources department, and Electricity and Energy Minister Dr **Kgosientsho Ramokgopa** announced recently that **Subesh Pillay** had been appointed as acting director-general.

In a presentation to the Portfolio Committee on Electricity and Energy on April 23, the department announced that its aim was to increase the installed base of renewables from 11 GW currently to 33 GW by 2030 and raise local content in these projects to 60% by that date.

In addition, it intended to expedite the Transmission Development Plan, by introducing private Independent Transmission Projects in support of the National Transmission Company South Africa's own efforts; in the process raising private-sector investment in energy infrastructure from R80-billion to R400-billion by the end of the decade.

It is also aiming to facilitate the creation of 200 000 new energy sector jobs aligned to the country's just energy transition, increase the proportion of electricity generated by independent power producers from 14% currently to 40%, and shepherd in 500 000 t of green-hydrogen capacity.

Project approval systems should also be streamlined to reduce licensing and permitting turnaround times for new electricity projects from 24 to 6 months and South Africa should rank in the top 10 globally for clean energy investment.

By the end of the decade, the DEE says yearly loadshedding days should be zero, there should be a market code in place for electricity trading, alongside a fully operational wholesale electricity market, and the proportion of electricity traded within the Southern African Power Pool should rise to 15% from 5%.



KGOSIENTSHO RAMOKGOPA
The Minister has announced an acting director-general for the newly separated department

To guide the procurement of new generation, the DEE intended finalising a new Integrated Resource Plan, which it dubs IRP2025, as a replacement to the prevailing IRP2019.

A draft version is currently being discussed by the social partners at the National Economic Development and Labour Council before being presented to Cabinet for its approval.

The department is aiming for the IRP2025 to be "fully implemented" by 2030. Likewise, it intends to fully implement a gas masterplan, which is currently still in draft form.

Internally, the DEE intends to have 100% of its core business functions digitalised by 2030, improve gender and age-group representation across its employee base, sustain a clean audit and ensure that all the State-owned entities in its orbit do likewise.

The department has shareholder responsibility for Eskom, the National Energy Regulator of South Africa, the National Nuclear Regulator, the South African Nuclear Energy Corporation, the National Radioactive Waste Disposal Institute and the South African National Energy Development Institute.

The DEE has a yearly budget of more than R6-billion, more than R4-billion of which is directed to Eskom and municipalities in support for the Integrated National Electrification Programme.

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WIND ENERGY

Offtaker Tailwinds

Rising role of South Africa's private offtaker market underscored in latest Global Wind Report

TERENCE CREAMER | CREAMER MEDIA EDITOR

The growing role of the private offtaker market in stimulating the South African wind sector has been highlighted in the latest 'Global Wind Report', which has been released by the Global Wind Energy Council (GWEC).

In a section on South Africa, authored by the South African Wind Energy Association, the report notes that at least 15 private offtake projects totalling 1 943 MW have been announced following the market reforms of 2022 enabling renewables projects of any size to proceed without a licence.



MAJOR HICCUP
Grid access remains a key bottleneck for new wind projects

These projects, the report states, are either under construction or will begin later this year.

"The first private offtake wind project to deliver power through the national grid was the 69 MW Msenge Emoyeni Wind Farm, completed in October 2024, which supplies power from the Eastern Cape to a petrochemicals producer in the Free State."

The report notes that most private offtakers are in the mining and petrochemicals industries, which are contracting for renewable electricity as part of efforts to decarbonise their operations.

However, it also notes that several wind projects have signed agreements with traders and aggregators, signalling the arrival of the power trading market, as well as a geographical diversification outside of the traditional wind heartlands of the Eastern, Western and Northern Cape provinces, to include Mpumalanga.

"Mpumalanga has long been the heart of South Africa's coal power generation, hosting the majority of Eskom's coal-fired power stations.

"The construction of Ummbila Emoyeni, the province's first wind farm, signals a significant shift towards renewable energy," the report notes.

The move to the private offtake market had arisen as South Africa's public procurement programme, which had dominated the initial phase of wind deployments, faced difficulties.

A total of 4 287 MW of wind energy had been procured under government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) since 2011, with 3 344 MW already operational.

However, the last successful bid window for wind was in 2021, when projects with a combined capacity of 1 608 MW advanced to the preferred bidder stage, and only 784 MW proceeded to construction, owing to Covid-linked supply-chain pressures and cost increases.

Subsequent bid windows for wind have failed, owing to insufficient grid capacity and a lack of clarity on curtailment rules, but the GWEC report states that the new Department of Electricity and Energy intends introducing reforms to restore the success of the public procurement model.

The project pipeline, the report notes, stands at 53 GW of wind and wind-hybrid projects, of which 33 GW could potentially be built by 2030, while the draft Integrated Resource Plan 2024 (IRP2024), which is currently under consideration, indicates that between 69 GW and 76 GW of wind energy will be needed between 2031 and 2050.

However, grid connection capacity is held up as a major obstacle to accelerating wind energy deployments, with government proposing to supplement the build programme under way by the National Transmission Company South Africa with private independent transmission projects.

"In the short term, the wind energy industry awaits the revised IRP2024, which will provide direction for new electricity infrastructure over the next two decades and help restore investor confidence.

"The government is also planning to reform and restructure the REIPPPP to address current challenges, accelerate renewable energy procurement, and align with ongoing power sector reforms," the report states.

Tariff Headwinds

South Africa's difficulties with auctions, grid capacity and supply chains are also key global themes in the 2025 report, despite record wind installations of 117 GW in 2024, raising total installed capacity globally to 1 136 GW.

The GWEC is also still forecasting that another 138 GW will be installed this year, as well as a compound average growth rate of 8.8% to 2030, which would translate to another 981 GW of wind energy capacity across the globe by the end of the decade.

However, GWEC CEO **Ben Backwell** acknowledges that the "aggressive stoking of tariff wars" will bring further uncertainty and also threatens to disrupt the international supply chains on which the wind industry relies.

"Trade barriers and fragmentation presents an increasing risk to wind energy's ability to accelerate growth through the efficiencies of a global, interconnected supply chain.

"The spread of protectionist policies, from tariffs to local content requirements, is gradually fragmenting the global trade regime with real consequences for the wind industry if trade-friendly industrial development policies are not followed," Backwell states.

The report highlights the essential role of local industrialisation to the wind industry's long-term competitiveness and profitability, but argues that localisation should be achieved without an over-reliance on market-disruptive measures.

Instead, the GWEC argues in favour of an approached that seeks to leverage localisation through policies that focus on market predictability, skills development, regional cooperation and harnessing local industrial strengths.

The industry is also being affected by what the GWEC describes as disinformation and misinformation, which is affecting the social acceptance of wind projects.

"The spread of false narratives about wind energy is exacerbating the persistent and multi-faceted issue of permitting bottlenecks, influencing policy decisions and eroding public trust in renewable energy solutions," the report warns.

CRITICAL MINERALS

Critical Acceleration

Trump administration fast-tracks 10 mining projects in critical minerals push

MARIAAN WEBB | CREAMER MEDIA SENIOR DEPUTY EDITOR ONLINE

The Trump administration has moved to expedite permitting for ten mining projects across the US as part of a broader effort to boost domestic production of critical minerals and reduce reliance on foreign supply chains.

The selected projects – spanning copper, lithium, gold, potash, and coal – include developments by companies such as Rio Tinto, Hecla Mining, Albemarle, Warrior Met Coal and Perpetua Resources.

They represent the first wave of initiatives under President **Donald Trump**'s recent executive order aimed at increasing American mineral production. Projects greenlit for fast-track permitting include Rio Tinto's Resolution Copper project in Arizona, Perpetua's Stibnite gold project in Idaho, Albemarle's Silver Peak lithium mine in Nevada, and Warrior Met Coal's Alabama operations.

Also on the list are the McDermitt lithium exploration project, Caldwell Canyon phosphate project, Libby and Lisbon Valley copper projects, the South West Arkansas bromine project, and the Michigan potash development.

The projects have been added to the federal permitting dashboard under the FAST-41 programme, providing increased transparency and accountability in the federal environmental review process. This marks the first use of the council's transparency authority under the critical minerals directive.

"We look forward to showcasing the many benefits the federal permitting dashboard can bring to critical infrastructure projects as part of President Trump's executive order on increasing American mineral production," said acting executive director at the permitting council **Manisha Patel.**

The designation makes permitting timelines and review milestones for each project publicly available.

Resolution Copper said that it appreciated the federal government's recognition of the role domestic copper production played in supporting national security, manufacturing, and economic resilience.

"There is growing recognition of the urgent need to develop domestic sources of copper and other critical materials to support the nation's energy security and industrial base," said Resolution Copper GM **Vicky Peacey.** "We are committed to playing a meaningful role in helping to deliver these materials and will continue to engage constructively in the national dialogue."



DONALD TRUMP
The US President has signed an executive order aimed at increasing US mineral production

Peacey said Resolution remained committed to an inclusive and respectful collaborative process that incorporates feedback from local communities, Tribal Nations and all stakeholders. "More than a decade of extensive consultation and collaboration with Native American Tribes and local communities has directly led to major changes to the mining plan to preserve and reduce potential impacts on cultural interests, and this ongoing dialogue will continue to shape the project."

Meanwhile, Perpetua president and CEO **Jon Cherry** said that being recognised as a transparency project by the White House underscored the strategic value of the Stibnite gold project, which is uniquely positioned to supply the critical mineral antimony – essential to national security and energy technology.

He said Trump's executive order was right to recognise that if the US was going to compete against China, it had to deploy federal tools to even the playing field for domestic mining projects. "Defense Production Act Title III awards, the US Export-Import Bank's China Transformational Exports Programme and Make More in America initiative, and other programmes that extend capital for critical mineral production can help meaningfully push back against China's attempts to clinch global control over critical minerals." Cherry stated.

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GREEN HYDROGEN

Sustained Stretch

Working group has been established to extend ferrochrome's horizon, Minister reports

MARTIN CREAMER | CREAMER MEDIA PUBLISHING EDITOR

A working group with industry has been established to improve the operating environment for the long-term sustainability of South Africa's ferrochrome industry, Trade, Industry and Competition Minister **Parks Tau** has reported in an article in Business Day, which has been published at a time when the testing of highly convincing new home-grown smelting technology is well advanced.



Source: Bloomberg

LOST DOMINANCE
In the early 2000s, South Africa was the undisputed No 1 chrome-ore- and ferrochrome-producing country

The Proudly South African SmeltDirect is said to have the potential to re-establish South Africa as the global ferrochrome hub that it once was – and a more environment-friendly one at that.

SmeltDirect is characterised by chemical reactions rather than large electricity volumes and can be retrofitted to the many existing ferrochrome smelters now on care and maintenance owing to high electricity tariffs.

"It's not a time for retreat but for reinvention," Tau wrote, while also reiterating that chrome is exempt from the new US tariff structure.

In March, pilot testing of the new smelt technology was said to be "looking great" and its commercialisation prospects will likely be known by the end of next month.

It has to be emphasised that South Africa hosts more than 70% of the world reserves of chrome ore and was dominant in ferrochrome production until 2010.

In the early 2000s, South Africa was the undisputed No 1 chrome-ore- and ferrochrome-producing country, with 90% of the inputs, including technology and equipment, locally sourced.

More than 200 000 direct and indirect jobs were created across the chrome value chain and 20% of mining-related foreign exchange was earned from ferrochrome sales.

In 2010, the chrome value chain contributed R42-billion to South Africa's GDP and generated R36-billion worth of foreign exchange earnings, with ferrochrome production contributing 80% of the value of the chrome value chain.

Ferrochrome is a key ingredient of stainless steel, which is environmentally friendlier that carbon steel because of its long life.

Interestingly, South Africa is the largest producer of titanium-bearing stainless steel outside of China and Europe, whereas the US produces nickel-bearing stainless steel.

South Africa's titanium-bearing stainless steel is used in the automotive catalytic converters that South Africa manufactures in Gqeberha, which Tau quotes naamsa | The Automotive Business Council as saying represent this country's largest automotive component export.

From 2018 to 2022, South Africa exported R14.1-billion to R23.9-billion worth of catalytic converters to mainly the EU and the UK, which, despite the current turmoil in global trade, remain reliable trading partners, the Minister pointed out.

The vehicle exhaust emission control devices convert toxic gases and pollutants in exhaust gas from an internal combustion engine.

The first widespread introduction of catalytic converters, which prevent air pollution, was in the US automobile market, dating back to 1975.

These auto catalytic converters use South Africa's platinum group metals (PGMs), which are also not subject to the new US tariffs and which Tau urged should be re-imagined into alternative applications, particularly in emerging clean energy technologies.

"There's a need to adapt to a shifting global paradigm and the transformative potential of green hydrogen, to unlock economic growth," the Minister wrote.

New applications are constantly being found for PGMs, which are the biggest employer of South Africa's mineworkers.

As this year's PGM Industry Day heard, the PGM ruthenium, for instance, is unlikely to be able to continue to hide its light under a bushel. It is now seen to have a bright future in green hydrogen, green chemistry and electronics.

Tau placed great emphasis on the need for South Africa to adapt to the shifting global paradigm and the transformative potential it is bringing for green hydrogen and its transported derivative green ammonia to unlock economic growth.

This follows European Commission president **Ursula von der Leyen** urging South Africa to do just that and reports such as this one constantly coming out of countries such as Germany: "While we may not (yet) have a dedicated Minister for Hydrogen in Germany, we are well on our way to anchoring this versatile molecule and its growing relevance firmly in the minds and actions of political decision-makers. Most importantly, we're showing how many industries (such as chemicals) are already involved in hydrogen. It's no longer a topic reserved for the hydrogen-savvy few. It's becoming an everyday reality. Our mission is to help defossilise daily life for everyone," stated Hydrogen Product-Market-Fit's **Silke Frank**.

In Australia, iron-ore mining company Fortescue has signed an agreement with Bocimar, part of Belgium's CMB.TECH, to charter a new vessel powered by green hydrogen-derived green ammonia.

The 210 000 dry weight ton Newcastle max vessel is expected to be delivered by the end of 2025 and will transport Fortescue's iron-ore exports from the Pilbara to customers in China.

Fortescue, which has positioned itself as a zero-emission advocate, is calling for the direct adoption of green ammonia as a long-term marine fuel and opposing transitional alternatives such as biofuels and liquefied natural gas. In Oman, a development agreement has been signed to create the world's first liquid hydrogen import corridor between Oman, Holland and Germany, the Port of Amsterdam announced on April 17.

The corridor will connect the Port of Duqm in Oman, the Port of Amsterdam and German logistics hubs, including the Port of Duisburg.

The agreement is a step towards delivering large-scale green hydrogen volumes from Oman to Europe by 2029.

In France, green hydrogen producer Lhyfe has announced that a €149-million grant has been confirmed for the green hydrogen production plant it is developing near the Grand Canal of Le Havre. The 34 t/d project was

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WATER

Potable Blueprint

KZN estate sets standard in sustainable water management

NATASHA ODENDAAL | CREAMER MEDIA SENIOR DEPUTY EDITOR

Simbithi Eco-Estate, a 430 ha residential community in KwaZulu-Natal, has been integrating sustainable water management practices into its everyday operations.

The estate's forward-thinking water management strategies and solutions offer valuable insights for other estates and developments seeking to enhance their own water resilience.

In a thought leadership piece sent to *Engineering News & Mining Weekly*, Simbithi Eco-Estate technical manager **Nikilesh Misra** outlines how the estate adopted a range of practical, effective solutions to mitigate immediate water-related challenges while laying the foundation for long-term resilience to ensure it thrives in a rapidly changing climate.

One impactful measure he highlights is the implementation of smart water metering in 2021, when the estate replaced outdated underground meters with remotely monitored devices.

In addition to enabling residents to track their consumption in real time through an app, the devices provide early leak detection capabilities, as well as the ability to monitor peak-use patterns, thereby optimising water distribution and reducing waste.

"Beyond mere convenience, this initiative has shifted mindsets. When people can see their water use and identify inefficiencies, they become more conscious consumers," says Misra.



WATER LEADERSHIP
The estate's forward-thinking water management strategies and solutions offer valuable insights for other estates

Further, at the Simbithi Country Club, which forms part of the Simbithi Eco-Estate, a stormwater attenuation system has been incorporated at the 8 200 m² sports complex to slow runoff, prevent soil erosion and protect the natural ecosystems.

During significant rainfall events, such as a one-in-50-year storm lasting 15 minutes, the complex can produce a peak discharge of about 464 litres a second, totalling about 420 m³ of stormwater.

This is managed through a 260 m³ attenuation tank constructed under the lap pool that captures and retains excess stormwater, releasing it at a controlled rate of 159 litres a second to mirror predevelopment conditions.

"This system not only mitigates flood risks and safeguards downstream ecosystems, such as our golf course and natural bushlands, but it also repurposes the retained stormwater to support the estate's water needs, including irrigation for the golf course and replenishing the swimming pool."

Beyond infrastructure, Mistra further notes that resident-led conservation efforts play a crucial role in building a sustainable water culture.This includes rainwater harvesting, which has gained momentum as hundreds of homes are collectively storing thousands of kilolitres of water and reducing reliance on municipal supply.

"Regular water quality testing ensures that our estate's dams meet recreational standards, while broader sustainability initiatives, such as electronic waste collection, recycling and solar energy adoption, support a holistic environmental strategy."

Responsible water management extends beyond conservation, he continues, explaining that by embedding sustainability into the estate's planning and its residents' everyday habits, a future can be shaped where water is available and managed in a way that benefits both people and the environment.

"At Simbithi, we are proving that sustainable water management is not just a possibility but actually a necessity. The question is no longer whether we should act, but how quickly we can implement meaningful change."

"While no single estate has all the answers, the collective impact of thoughtful interventions can be profound. Now is the time for developers, estate managers and homeowners to take action," Mistra concludes.



DIAMONDS

Sparkling Boost

De Beers, Raizcorp welcome new cohort to diamond beneficiation project

SABRINA JARDIM | CREAMER MEDIA WRITER

De Beers Group, in partnership with business incubation company Raizcorp, has launched the third intake of the Enterprise Development Project for Diamond Beneficiators, aimed at supporting and developing entrepreneurs in South Africa's diamond industry.

De Beers, in a media release, said this milestone reinforces its continued commitment to driving growth, transformation and inclusivity in South Africa's diamond beneficiation sector.

First launched in 2016, the three-year programme supports entrepreneurs across the entire diamond value chain, from rough diamond buying, cutting and polishing, to jewellery manufacturing, marketing and distribution.

The programme provides a comprehensive suite of support services, including tailored technical, operational and strategic guidance designed to help businesses scale sustainably and contribute meaningfully to both the local and global diamond economies.

Speaking at the launch on April 17, Raizcorp CEO **Allon Raiz** pointed out that South African entrepreneurs contribute 34% to the country's GDP, highlighting that small businesses account for 91% of formal businesses locally.

"We've got a lot to grow in terms of what contributions small businesses make to our GDP," he said, highlighting the importance of having a clear vision, proper strategy and effective execution in entrepreneurship.

During the launch, four emerging enterprises were welcomed into the programme.

The four businesses which make up the 2025 cohort include Axel & Co; Shine Jewellery & Accessories; Elegânté; and House of Lemba Design.

De Beers noted in the media release that these companies, which specialise in jewellery design, manufacture and repair, were selected from a pool of emerging enterprises identified by stakeholders from across the local industry.

De Beers explained that each company met the programme's regulatory and operational criteria, ensuring they are well-positioned to add value within the beneficiation pipeline.

"The selected businesses share a passion for transforming precious metals and gemstones into jewellery of exceptional brilliance and beauty," De Beers said in the release.

The company noted that to date ten diamond beneficiation companies have benefited from this "ground-breaking" project since its inception.

Of these, 60% are women-owned and 80% are black-owned. Notably, the programme played a key role in the appointment of De Beers' first majority black-owned sightholder in January 2023, Molefi Letsiki Diamonds, an alumnus of the Enterprise Development programme.

The company stated that the programme continues to represent a "powerful example" of how effective collaboration between industry, government and entrepreneurs can unlock the full potential of local beneficiation and contribute to building a more inclusive, resilient diamond economy.



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FORVIA

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TELECOMMUNICATIONS

App Refresh

MTN launches revamped mobile application

NATASHA ODENDAAL | CREAMER MEDIA SENIOR DEPUTY EDITOR

Following the launch of the MTN App in 2019 and its refresh in 2022, telecommunications group MTN has now unveiled the next-generation version of the application.

The new MTN App introduces enhanced innovation and significantly improves the user experience, giving customers full control of their digital journey and connected lives.

"This launch unlocks new digital possibilities with an app that is smarter, faster and built to adapt to ever-evolving customer needs.

"With a strong focus on innovation and rapid advancement, this is another game-changer for the industry by MTN," says MTN South Africa online and telesales GM **Tania Ladopoulou**.

The new MTN app is built on advanced new technology, modified features and a robust code base, driving innovation and personalisation and enabling simplified, personalised experiences.

The company further incorporated enhanced security to combat fraud, with secure logins utilising MTN ID guaranteeing smooth and secure account access.

"The MTN App is a centralised digital gateway unlocking enhanced functionalities, with a fresh and modern look ensuring fast access and ease of use," says Ladopoulou.

The zero-rated MTN App enables customers to link all their MTN numbers in one app, allowing them to manage their MTN world in one place, change price plans and share data with friends and family through a new DataShare function, while customised Made4U bargains provide offers that are tailored to each customer's use profile.

The app also allows users to customise the home screen with applets for quick access to key features, and to access App-Only recharge offers and deals, which can lead to savings of up to 70%.

"The app also features a dark mode, minimising eye strain and enhancing power conservation with its elegant design. Users can check when they are due for an upgrade and manage their home Internet portfolio, bypassing the customary lineups," Ladopoulou continues.

The launch followed a successful limited release to beta-testers in February.

The beta-testers were able to manage multiple account lines in one place and to manage prepaid plans, SuperFlex and upgrades, while setting limits, tracking use, viewing balances and accessing invoices.

"After the beta phase's success, we are ready for a nationwide rollout and to bring the joys of the digital world to more people.

"Old and new users can enjoy every interaction, from button taps to animations, for a seamless digital experience," says Ladopoulou.

"We are incredibly pleased to be able to bring these modern, versatile and solution-orientated features to the market today."

In addition to interactive games to drive app use, future benefits will include sky plan management, business account management and management of mobile money and insurance accounts, concludes Ladopoulou.



• From page 12

selected in 2022 by the European Commission.

In the US, Plug Power and Olin Corporation flipped the switch on a new hydrogen liquefaction plant. By adding this capability, Plug Power is building out the full supply chain, moving one step closer to delivering liquid hydrogen for mobility and even off-grid power systems. The World Platinum Investment Council quotes Airbus Future Programmes head **Bruno Fichefeux** as saying: "Fully electric aircraft powered by hydrogen fuel cells have the potential to revolutionise air transport, complementing the sustainable aviation fuel pathway."

Airbus has reaffirmed its commitment to hydrogen-powered aviation by unveiling a new concept aircraft powered by fuel cell technology.

The aerospace giant is advancing its research into hydrogen propulsion as a viable solution for decarbonising commercial aviation, with plans to introduce a next-generation single-aisle aircraft in the latter half of the 2030s.

South Africa-linked AP Ventures' **Charlotte Downie** and **Caelin Palmer** comment that China, Japan and Germany are pressing ahead with hydrogen, particularly in transport and industrial applications, and that hydrogen for short-haul air travel is gaining traction.

All over, platinum is helping to improve air quality and achieve decarbonisation goals. It is at the forefront of hydrogen fuel cell technology, powering zero-emissions fuel cell electric vehicles and also researching and developing a use in battery electric vehicles.

Right here in South Africa, right now, automotive catalytic converters continue to be in demand for internal combustion engine exhaust systems and it must be highlighted that these locally produced autocatalysts are made from argon-super-intensive titanium stainless steel – titanium-stainless without nickel but with local ferrochrome.

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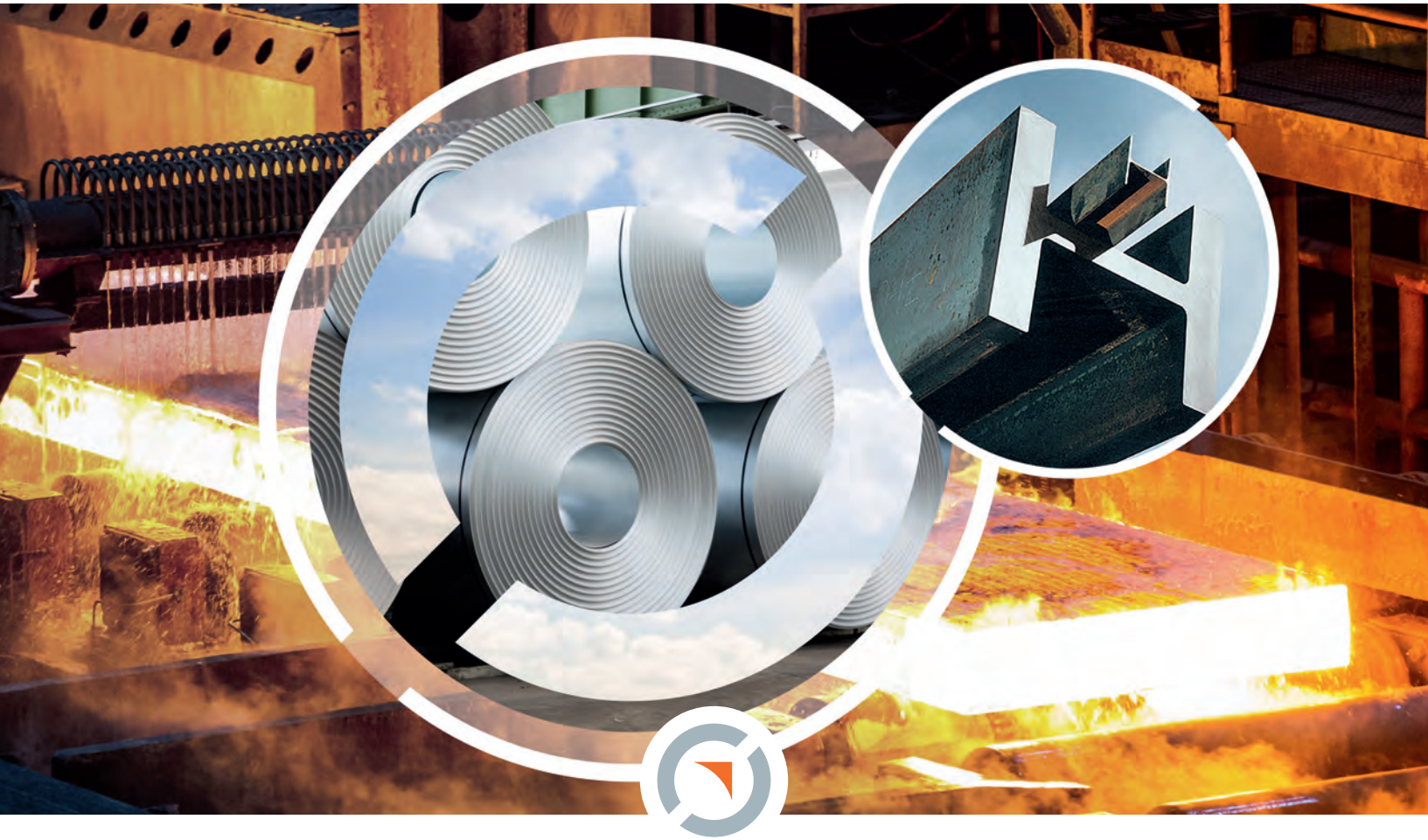
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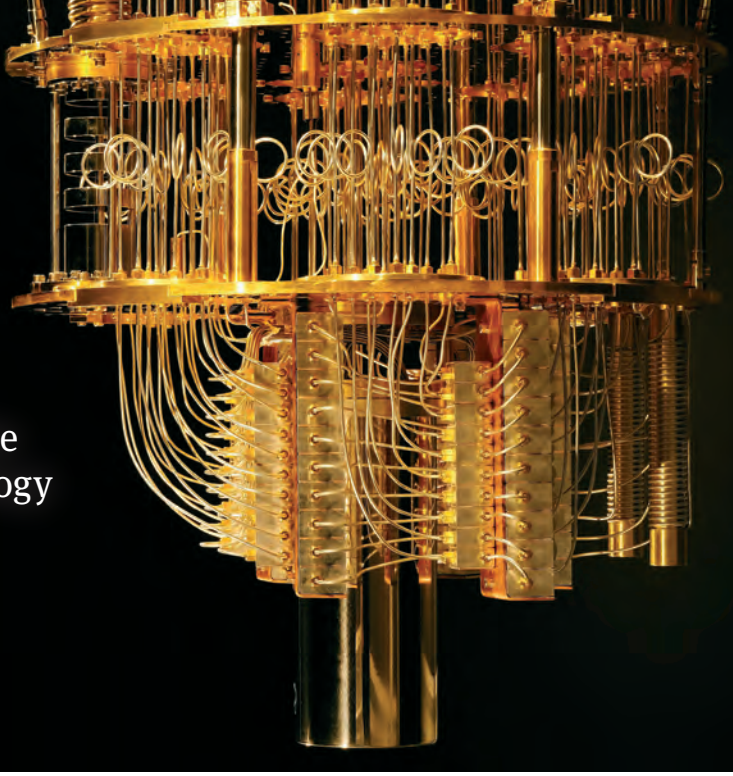
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SCIENCE & TECHNOLOGY

QUANTUM WORLD

Some real-world prospects emerging as globe marks year of quantum science and technology

REBECCA CAMPBELL | CREAMER MEDIA SENIOR DEPUTY EDITOR



QUANTUM COMPUTING
IBM Quantum System One is the first circuit-based commercial quantum computer and was introduced in January 2019

This year is the International Year of Quantum Science and Technology. Proclaimed by the UN, it celebrates the centenary of the development of the theory of quantum mechanics and is being marked by events all around the world, on every inhabited continent. In Africa, events have taken, and will take, place in Algeria, Egypt, Mauritius, Mozambique, South Africa and Zimbabwe. Quantum science, also called quantum physics, is decidedly, if not notoriously, esoteric.

"Quantum physics is the study of matter and energy at the most fundamental level. It aims to uncover the properties and behaviours of the very building blocks of nature," explains the California Institute of Technology's Caltech Science Exchange website. "The field of quantum physics arose in the late 1800s and early 1900s from a series of experimental observations of atoms that didn't make intuitive sense in the context of classical physics. Among the basic discoveries was the realisation that matter and energy can be thought of as discrete packets, or quanta, that have a minimum value associated with them. For example, light of a fixed frequency will deliver energy in quanta called 'photons'. Each photon at this frequency will have the same amount of energy, and this energy can't be broken down into smaller units."

These discoveries led, in the 1920s, to the development of quantum mechanics, which was developed by some of the greatest figures in the history of physics – **Niels Bohr**, **Werner Heisenberg**, **Erwin Schrödinger**, and others. It explains simple phenomena, for example how the position or the momentum of a single particle or a small group of particles changes over time. Quantum mechanics became and remains the basic mathematic framework for all quantum science.

To move from such simple phenomena to understanding how things actually work in reality, quantum mechanics had to be combined with other discoveries and theories of physics, particularly the special theory of relativity, developed by **Albert Einstein**. Special relativity explains what occurs when objects move extremely fast. The result was three quantum field theories, to explain three of the four fundamental forces through which matter interacts. These three forces are electromagnetism, the strong nuclear force, and the weak nuclear force. The first explains how atoms hold together, the second, why the nuclei of atoms are stable, the third, why some atoms experience radioactive decay.

Structure of an Atom

There are several particularly important key concepts in quantum physics. One of these concerns the structure of an atom: the old idea that an atom was like a miniscule solar system, with electrons orbiting the nucleus like planets orbit the Sun, is wrong. Rather, quantum theory conceives of the electrons as being spread within "orbitals" (these being mathematical descriptions showing the probability of the existence of the electrons in more than one place, within a specified range and at a specified time); electrons can "jump" from one orbital to another, if they gain or lose energy, but they can never be located between orbitals.

Another of these concepts is wave-particle duality: light and matter, experiments showed, seemed to be either particles or waves, depending on the way they were measured. The current understanding is that they are not, in fact, either particles or waves but, in Caltech's words, "distinct quantum objects that we cannot easily conceptualise".

A third key concept is the uncertainty principle, which is associated with Heisenberg's name. To put it simply, two properties of a quantum object, such as its position and velocity, cannot be precisely determined at the same time.

Then there is the concept of superposition. This describes a quantum object as "a combination of multiple possible states at the same time". Caltech's analogy is with a ripple on a pond which is a combination of two overlapping ripples. Mathematically, superposition in an object is represented by an equation with more than one solution.

A fifth key concept is entanglement – which Einstein famously described as "spooky action at a distance". Entanglement occurs when two or more quantum objects are so linked that they can be considered as a single system, even if they are distant from each other. You cannot fully describe one of the entangled objects without information on the state of the other one. On the other hand, gaining information on the state of one of the objects immediately gives you information about the other (and vice versa).

Then there is the concept of decoherence. This is the process by which quantum particles and systems decay or collapse or change, becoming single states which can be measured by classical physics.

Lastly, there is interference. This is the phenomenon of entangled quantum states interacting and producing more or less likely probabilities.

Standard Model

The three quantum field theories, together, provide us with what is called the Standard Model of particle physics. Writing in the New Scientist, **Richard Webb** described this as a "ramshackle coalition" that was also the "most accurately tested picture of matter's basic working that's ever been devised".

It's greatest triumph so far was the 2012 discovery of the Higgs boson (which gives all other particles their mass), the existence of which had been predicted by quantum field theories in 1964. However, much remains which cannot be currently explained by quantum theories. One of these is the fourth fundamental force, gravity, which is currently explained by Einstein's general theory of relativity, a totally non-quantum theory that doesn't make use of particles. "The world is at some level quantum," says Webb, "but whether quantum physics is the last word about the world remains an open question."

Real-World Technologies?

All very fascinating. But, does this have any relevance in our reality? It's beginning to. Quantum science is opening the door to real-world, practical, quantum technologies. These include quantum computing, quantum communications, quantum navigation and quantum sensors.

Quantum computing is the best known of these. Quantum computers already exist, but they are still at the development stage.

"By taking advantage of quantum physics, fully realised quantum computers would be able to process massively complicated problems at orders of magnitude faster than modern machines," highlights renowned US-based supercomputer, quantum computer, AI, software and research and development group IBM. "For a quantum computer, challenges that might take a classical computer thousands of years to complete might be reduced to a matter of minutes."

Quantum computing makes use of superposition, entanglement, decoherence and interference. While classical computing stores and processes data by using binary bits (that is, a bit can represent either the numbers zero or one), quantum computing uses qubits (an acronym for quantum bit). Qubits can be both zero and one at the same time (superposition).

Qubits are created by manipulating and measuring photons, electrons, trapped ions and atoms, which are all quantum particles. Superconducting circuits can also be engineered to behave like quantum particles. All these options require that the qubits be kept at extremely low temperatures, to minimise "noise" and avoid unintended decoherence, which would result in errors or other inaccurate results.

"When combined, qubits in superposition can scale exponentially," explains IBM. "Two qubits can compute four pieces of information, three can compute with eight, and four can compute with sixteen. However, each qubit can only output a single bit of information at the end of the computation. Quantum algorithms work by storing and manipulating information in a way inaccessible to classical computers, which can provide speedups for certain problems."

To reiterate, quantum computers work in a totally different way to classical computers. To solve a problem, a classical computer runs through every possible option until it finds the solution. "[Q]uantum computers measure the probability amplitudes of qubits to determine an outcome," elucidates IBM. "These amplitudes function like waves, overlapping and interfering with each other. When asynchronous waves overlap, it effectively eliminates possible solutions to complex problems, and the realised coherent wave or waves present the solution."

With quantum computers comes the possibility of a quantum Internet to link them all together. This is currently a theoretical concept, and would not replace the current Internet, but complement it.

Communications & Navigation

The field of quantum communications is actually focused on making communications secure (that is, undecipherable), by using quantum phenomena such as superposition and entanglement. A number of pathways are being explored, and protocols developed, of which one at least is already in existence and is being tested – Quantum Key Distribution, better known as QKD.

Quantum navigation is intended to provide a highly accurate navigation system that is totally independent of satellites and so cannot be jammed. Such systems involve tracking a single atom held in cryogenic conditions. Last year, UK researchers successfully demonstrated such a system in tests on a naval vessel, on an aircraft, and on the London Underground system.

"Quantum sensing is an advanced sensor technology that vastly improves the accuracy of how we measure, navigate, study, explore, see and interact with the world around us by sensing changes in motion, and electric and magnetic fields. The analysed data is collected at the atomic level," notes UK-based major aerospace and defence group BAE Systems.

"It's called quantum sensing because it uses quantum resources – delicate phenomena that are apparent only on an atom-sized scale – to achieve this extreme accuracy. Collecting these 'delicate' data at the atomic level often means extracting information from individual atoms instead of from the huge collections of atoms, as happens in classical physics."

Quantum sensing systems already exist, but hitherto they have been scarce and highly prized. This is now changing and they are becoming ever more widely available. Currently, there are six types of quantum sensors in use or under active development – quantum chemical sensors, quantum clocks, quantum gravimeters, quantum thermometers, quantum magnetometers, and quantum imaging interferometers. They employ phenomena such as entanglement, superposition as well as discreet states and coherence.

Once it is widely deployed, quantum sensing is expected to dramatically improve the capabilities for a wide range of industries and service sectors. These range from aerospace to medicine and health care, from computer and electronics to geology and civil engineering, from climatology and weather forecasting to minerals and mining, from government agencies to utility companies, space exploration to law enforcement, environmental management to transit companies, and many others.

The Players

Given the enormous promise of quantum technologies, it is unsurprising that a lot of money is going into their development. Last year, the World Economic Forum reported that 28 national governments, spread across all the inhabited continents, were investing an estimated total of $40-billion in quantum technologies. Note, this figure excludes all private sector investment and seems to exclude investments by subnational governments, such as those of federal states or provinces. So, the real figure is much higher.

The top ten were China ($15-billion), the UK ($4.3-billion), the US Quantum Initiative ($3.76-billion), Germany ($3.3-billion), South Korea ($2.35-billion), France ($2.2-billion), Russia ($1.45-billion), Canada ($1.1-billion), the EU Quantum Flagship programme (also $1.1-billion), and the Netherlands ($1-billion). Of the other Brics countries, India was spending $735-million, while Brazil (the only South American country on the list) was far behind, at $12-million.

The good news is that South Africa was on the list, the only African country to make it. The bad news is that it was in last place, at only $3-million. For comparison, Thailand was committing $6-million, Qatar $10-million, while New Zealand was investing $36.75-million and Australia, $699-million.

Nevertheless, a small programme is much better than no programme. This programme is the South African Quantum Technology Initiative (SA QuTI). The goal of SA QuTI is to "create the conditions for a globally competitive research environment in quantum technology and grow a local quantum technology industry in South Africa".

SA QuTI has five nodes, namely the University of the Witwatersrand, the University of KwaZulu-Natal, Stellenbosch University, the Cape Peninsula University of Technology, and the University of Zululand. SA QuTI currently has three programmes, or 'Flagships' – quantum computing; quantum communications; and quantum metrology, sensing and imaging.

PRECIOUS METALS

Strategic Pullback

Barrick exits Donlin Gold in $1.1bn deal with Paulson and NOVAGOLD

MARIAAN WEBB | CREAMER MEDIA SENIOR DEPUTY EDITOR ONLINE

Canadian miner Barrick Gold has announced a deal to divest its 50% stake in the Donlin Gold project in Alaska for up to $1.1-billion, marking an exit from the asset while strengthening its focus on Tier 1 operations.

The buyers – long-time NOVAGOLD investor Paulson Advisers and NOVAGOLD itself – will become joint owners of one of North America's largest undeveloped gold projects.

Paulson will acquire an 80% interest in Barrick's share of Donlin Gold for $800-million, while NOVAGOLD will acquire the remaining 20% for $200-million, raising its overall ownership in the project to 60%.



GOLDEN GOODBYE
The Donlin gold project in Alaska, from which Barrick Gold is withdrawing

The remaining 40% will now be held by Paulson, whose chairperson, **John Paulson**, described Donlin Gold as "one of the most attractive development gold projects in the world".

The deal also includes an option for NOVAGOLD to buy out $100-million in debt owed to Barrick, at a discount if completed before closing. The transaction is expected to close in late second quarter or early third quarter, subject to regulatory approvals.

"The Donlin agreement allows Barrick to exit the Donlin Gold project at an attractive valuation, while allowing NOVAGOLD and Paulson to pursue the development of the project," said Barrick CEO **Mark Bristow**.

"This is a good example of an instance where an asset we own might be better suited in the hands of others," he stated.

The proceeds will be used to strengthen Barrick's balance sheet, invest in core growth projects, and deliver returns to shareholders, the company said.

For NOVAGOLD, the deal represents a chance to advance the project that has long been stalled in the pre-development phase. The company has secured $170-million in equity funding commitments from Paulson, Electrum Group, and Kopernik Global Investors to finance

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REQUEST FOR EXPRESSION OF INTEREST FOR ACQUISITION OF 50% SHARES IN MORAFE GROUP (PTY) LTD.

Morafe
Group of Companies Pty LTD
Beyond Diamond

LESOTHO

The Qaqa Diamond Mine owned by Morafe Group of Companie (75%) and Government of the Kingdom of Lesotho (25%). Morafe Group was granted 10 year Mining Lease by Government of Lesotho. Qaqa Diamond Mine is a open Pit Kimberlite Mine.

Morafe Group (Pty) Ltd invites interested Investors to submit Expression of Interest "EOI" for the acquisition of 50% in Morafe Group of Companies (Pty) Ltd.

Qaqa Diamond Mine is between Letšeng Diamond Mine and Mothae Diamond Mine. The mines produces predominantly large Type 11a gem quality diamonds.

QAQA KIMBERLTE MINES 1- 5:

It consists of a numbers of Kimberlite Pipes Clusters, combined forms a total surface area of 67.4 ha

Qaqa Mine 1: 8.9 ha, Have Processing Plant (75tph) Bulk Sampling produce 2,5cpht of highest quality diamonds, most top & white Type IIa stones.

Qaqa Mine 2: 15 ha. Currently under construction : Have Processing Plant (30tph) and infrastructure such as Slams Dam, Freesh Water Dams, Camp, Offices, Access Road ect.

Qaqa Mine 3: 10.9 ha, Mine 4: 7 ha. Mine 5: 25.6 ha : Compared to Letšeng and Mothae kimberlite pipe, it has been found that there are very common features, especially when it comes to mantle derived rocks, Kimberlite bodies have similar mineral assemblage as Letšeng satellite pipe and the main pipe of Mothae.

THE INTEREST PARTIES ARE REQUIRED TO INCLUDE THE FOLLOWING IN THEIR EOI:

1. FINANCE:
- *Verifiable bank letter confirming availability of funds and Facilities*
- *3 years Audited Financial Statement*

2. PROOF OF EXPERIENCE AND TECHNICAL COMPETENCE
- *Company Profile.*
- *Key personeel including technical team to run the project.*
- *Details of mining projects engaged in.*

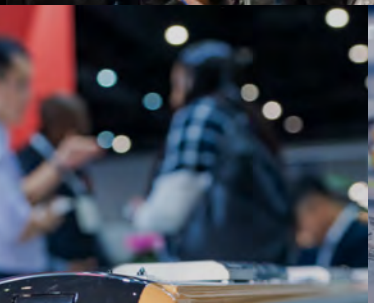
SUBMISSSION OF EXPRESSION OF INTEREST:
- *ONLY shortlisted bidder will be contacted for site briefing.*
- *Shorlisted bidders will be given Qaqa terms of reference and relevent documentation.*
- *Shortlisted bidder will be required to submit detailed proposal on the acquisition and development of Qaqa projects:* **Mine 1- 5.**

Interested parties must submit their EOI
BEFORE 30th May 2025

The Submission of EOI should be address to:
Nice@qaqadiamondmine.com | mohapik@icloud.com
Mr Mohapi Nice Khofu
Chief Executive Officer (CEO)
Qaqa Diamond Mine & Morafe Group of Companies
Cell: +26657683580 [WhatsApp]

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PORTS

Lift Lineup

Cape Town Container Terminal receives first batch of new rubber-tyred gantry cranes

DARREN PARKER | CREAMER MEDIA SENIOR CONTRIBUTING EDITOR ONLINE

The Cape Town Container Terminal (CTCT) has taken delivery of components of the first nine of 28 new rubber-tyred gantry cranes, which original-equipment manufacturer (OEM) Liebherr Africa has begun assembling on site.

The CTCT forms part of a network of 19 Transnet Port Terminals, and its investment in new equipment is expected to largely benefit the agricultural sector and other regional exporters.



RUBBER MEETS LOAD
The new rubber-tyred gantry cranes at the Cape Town Container Terminal

The new equipment can match crane workings owing to anti-sway technology that allows operating speeds to reach up to 90 km/h in windy conditions. This enables the terminal to better negotiate threats of inclement weather.

"The rubber-tyred gantry cranes we currently have operate at up to 72 km/h under windy conditions. So, the new ones give us huge opportunity to enhance our efficiencies," Western Cape Terminals managing executive **Oscar Borchards** said on April 17.

He added that operations would only be halted under extreme weather conditions.

Rubber-tyred gantry cranes are used mainly as stacking equipment and for moving containers between the stack and the ship-to-shore cranes. Borchard said it was crucial for CTCT to source equipment with environmental sustainability principles, noting that the new rubber-tyred gantry cranes come with a diesel electric hybrid system and a Tier 3 engine.

New-age enhancements include fitted video cameras with clear 3D views that assist the operator with load handling, spreader handling and crane operation.

The CTCT said the technical team is working towards assembling and commissioning the cranes and this includes endurance tests and training. The full process is expected to take up to five months before handover to operations. The CTCT is expected to take delivery of the next nine cranes in November and the final ten in June next year.



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the acquisition, with a further $30-million to be drawn from its treasury.

"The announcement of our new partner, Paulson, marks the watershed moment in our company's ambition to unlock conscientiously the full value of Donlin Gold," said NOVAGOLD chairperson **Thomas Kaplan**. "For such a prescient and illustrious gold investor as John Paulson to share our belief . . . is truly catalytic for NOVAGOLD."

"For myriad reasons, Paulson is quite literally the finest partner we could have hoped for. The embodiment of 'smart money', John has been recognised as having a unique ability to identify the right vehicle to execute legendary trades. John and his team's expertise and counsel will be invaluable as we work to advance Donlin Gold through feasibility and financing."

The partners plan to immediately relaunch technical and permitting work on the project, including an updated feasibility study, reserve and resource conversion drilling, and further exploration on the underexplored land package.

Located in Alaska's Kuskokwim region, Donlin Gold boasts 39-million ounces of gold in measured and indicated resources at 2.24 g/t — more than double the industry average. A 2021 study estimated a mine life of 27 years and average yearly output of 1.1-million ounces.

The project has received support from Alaska Native landowners Calista Corporation and The Kuskokwim Corporation (TKC), both of whom welcomed Paulson's involvement.

"We strongly welcome Paulson as a new partner – together we can create a future that respects our heritage while embracing economic opportunities," said Calista CEO **Andrew Guy** in a statement.

"The advancement of the Donlin Gold project represents a once-in-a-generation opportunity," added **Andrea Gusty**, CEO of TKC.

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RECYCLED CONSTRUCTION

Waste Bricks

CSIR develops cost-effective building block for houses using construction waste

SCHALK BURGER | CREAMER MEDIA SENIOR DEPUTY EDITOR

The Council for Scientific and Industrial Research (CSIR) has partnered with nonprofit organisation Use-It Waste Beneficiation and building solutions company Key Bricks to develop a prototype green building block made from construction waste material that can be used to build low-cost houses.

The innovation was funded through the Department of Science, Technology and Innovation (DSTI) Circular Economy Demonstration Fund, which is aimed at demonstrating proven circular economy interventions, including technologies, innovative process improvements and social innovations that have not yet achieved scale or impact in South Africa.

The partner organisations demonstrated to DSTI officials on April 11 the process of manufacturing the innovative building blocks, starting from the crushing of waste glass and building rubble to the finished block and, finally, the low-cost housing structure.

The green block contains 70% recycled waste content, including crushed waste glass, as well as construction and demolition waste. The block itself is 100% recyclable.

The bricks are designed to interlock, requiring no cement between layers, allowing for the building to be easily constructed with limited building experience and, if needed, the structure can later be deconstructed and the blocks reused at another location.

Each block features internal hollows, which, when stacked, create channels for installation of electrical and water pipes, reducing the need to cut grooves, also known as chasing, thereby ensuring that the blocks remain intact.

The blocks came from the need to find local markets for waste glass and building rubble in KwaZulu-Natal, explain CSIR senior researcher in sustainability economics and waste **Aubrey Muswema**, Use-it MD **Belinda Putterill** and Key Bricks CEO **Matt Olivier**.

"It's not viable to transport waste glass from KZN to Gauteng for recycling; the margins on this are just too slim, resulting in a lot of this waste remaining uncollected and impacting the environment. We needed to find ways to use glass locally in KZN," says Putterill.

Cities, towns and villages across the country are also plagued with the illegal dumping of building rubble in open spaces, and these blocks use crushed waste glass, and construction and demolition waste, thereby reducing the need for conventional virgin materials.

The block is cost-effective, and also saves construction time and requires minimal labour and building experience. The top structure was put up by relatively unskilled labour from foundation stage to the roof within seven days, which is only possible because of the interlocking nature of the faceted blocks, says Muswema.

By using waste as a resource, this interlocking block can unlock new business opportunities in the construction industry. Local businesses and value chains can benefit from the potential to generate additional revenue streams.



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Local Manufacturing



Adaptability, innovation key to remaining competitive in manufacturing sector

Compiled by Sabrina Jardim

Considering the South African manufacturing sector plays a pivotal role in supporting economic growth and job creation, companies have been urged to adapt and innovate to overcome the various challenges that impede the productivity and competitiveness of the sector locally and globally.

A constrained global macro environment, stilted fixed capital formation domestically and municipal service delivery issues are major challenges facing the sector, Steel and Engineering Industries Federation of Southern Africa (Seifsa) COO **Tafadzwa Chibanguza** told attendees of *Creamer Media Webinars*' local manufacturing webinar on April 23.

Facilitating the discussion was Manufacturing Circle executive director **Philippa Rodseth**.

Chibanguza described steel and engineering as the backbone of the local manufacturing sector, as it directly contributes 3.2% to the country's GDP, and emphasised the role of the domestic economy and public–private partnerships (PPPs) in creating consistent domestic demand for locally manufactured goods.

National Association of Automotive Component and Allied Manufacturers (Naacam) policy and regulatory affairs head **Beth Dealtry** noted that, while the introduction of tariffs by US President **Donald Trump** poses challenges for the local automotive component manufacturing sector, it also enables opportunities to tighten trade relationships within Africa and the EU.

She argued for the importance of diversifying export markets, but stated that the biggest challenge in the sector domestically is local demand. Over the past decade, vehicle production and sales have been "pretty stagnant", while import penetration has increased.

This, ultimately, impacts on the production volumes of original-equipment manufacturers and, consequently, component manufacturer volumes in South Africa, explained Dealtry.

Meanwhile, manufacturing software specialist Syspro Europe, the Middle East and Africa and Asia-Pacific strategic sales executive **Johan du Toit** underscored the role of technology and digitalisation in promoting competitiveness in the sector.

He noted the importance of adopting relevant technologies that enable companies to make data-supported decisions, as well as help to

drive competitiveness and manage costs.

From a renewable-energy perspective, Discovery Green head **Andre Nepgen** noted the impact of rising electricity costs on local manufacturers' sustainability. Many manufacturers have been driven to adopt on-site solar and battery systems, or wheeling, to remain competitive.

A longer-term view needs to be kept in mind when adopting renewable energy, he added, elaborating that the more renewable energy a business adopts, the more protection it has against looming carbon tax tariffs and fluctuating electricity prices.

Overall, panellists agreed on the importance of policy reforms to increase domestic demand and drive competitiveness in the local manufacturing sector.

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Scan the QR code to watch the recording of Creamer Media's Local Manufacturing Webinar.

Speaker Highlights



"In our global environment, the only thing that is certain is uncertainty, and that is something that we all have to address and be mindful of in this rapidly changing environment."

Philippa Rodseth – Manufacturing Circle



"Exports are important, but the domestic economy has a significant role to play for domestic demand, especially for large technical, capital-intensive industries, which need constant demand. The domestic economy has an important role to play in this regard. It has an even greater role to play in turbulent times such as those we live in now."

Tafadzwa Chibanguza – Seifsa



"The reality is, we have to think slightly outside of the box in what is a relatively constrained domestic environment."

Beth Dealtry – Naacam



"There's a lot of . . . technology out in the market at the moment . . . but by far the biggest contribution is the ability to make data-supported decisions."

Johan du Toit – Syspro



"South Africa has some of the best renewable energy resources in the world . . . yet, the country has some of the lowest penetration of renewable energy worldwide . . . There's no reason why local manufacturing cannot operate on some of the lowest-cost electricity in the world. There's no reason why South African companies can't be some of the most renewable, or green, lowest-emission businesses globally."

Andre Nepgen – Discovery Green

Scan the QR code to register for the Agriculture Webinar on May 28, 2025.

ECONOMY

Ripple Effects

US trade tariffs pose severe indirect risks to sub-Saharan Africa, BMI warns

DARREN PARKER | CREAMER MEDIA SENIOR CONTRIBUTING EDITOR ONLINE

While the direct effects of US tariffs on sub-Saharan African trade were limited, the broader economic and political ramifications – through falling commodity prices, fiscal tightening and rising insecurity – were likely to be severe across the region, BMI head of sub-Saharan Africa country risk **Jane Morley** has said.

Speaking during a webinar hosted by BMI – a Fitch Solutions company – on April 23, she said that, despite the ongoing debates over tariffs, they are likely to remain in place in some form.

This was the result of a structural shift in trade policy under US President **Donald Trump**, aimed at achieving objectives including increasing tax revenue, improving supply chain resilience, attracting investment and boosting jobs. Morley stated that BMI believed the US administration was interested in negotiating agreements with other countries to reduce the average tariff rate, which currently stood at about 25%.

BMI also anticipated the introduction of additional Section 232 tariffs on goods such as semiconductors and pharmaceuticals. As these sectors had been slow to see tariff reductions, the administration might attempt to offset their impact by reducing tariffs in other areas through negotiations, though this could prove difficult.

She added that there was also an incentive for Trump to de-escalate trade tensions, despite his rhetoric. Trump had acknowledged that the US economy could experience some discomfort. Should the economy enter a recession, it could result in a growing fiscal deficit, complicating future fiscal consolidation and weakening the labour market. This, in turn, might affect Republican prospects in the 2026 midterm elections.

Morley said that while Trump had signalled that certain economies might be able to negotiate tariff rates below 10%, it remained reasonable to expect average tariff rates to remain elevated at around 20%. She noted that this figure was significantly influenced by the high tariff rate applied to China.

According to BMI, high tariff rates were expected to negatively impact global growth through four main channels: the direct impact on bilateral trade owing to weakened trade flows from increased relative prices; reduced business spending and job growth owing to heightened uncertainty; a negative wealth effect on households stemming from declining equity markets and rising unemployment; and tighter financial conditions constraining lending and investment.

As a result, BMI had revised down many of its economic forecasts, including for major economies such as the US, China, and Germany. Forecasts for sub-Saharan African markets were also downgraded, although the extent varied depending on factors such as effective tariff rates, second-round effects and domestic conditions.

Morley noted that all 49 sub-Saharan African markets were currently subject to a baseline 10% tariff on most exports to the US, with exceptions for critical minerals and oil. Higher tariffs of 25% applied to steel, aluminium and automotive goods. She cautioned that the 10% figure could be misleading, as effective tariff rates varied considerably.

She explained that countries such as Somalia, Mali and Burkina Faso faced high effective tariff rates but were not significantly impacted owing to limited trade volumes with the US.

"Indeed, this is the broad story for sub-Saharan Africa, since US- sub-Saharan African trade just isn't that substantial in the first place. The US only accounts for about 4% of the region's total exports," Morley said.

However, exceptions existed. Morley cited Lesotho and Madagascar, which relied heavily on the US market for low-margin clothing and apparel exports. These sectors were highly vulnerable to tariff costs, leading to likely increases in consumer prices in the US and reduced demand.

While direct effects were minimal for most of the region, Morley emphasised the importance of second-round impacts, particularly the sharp decline in commodity prices following the tariff announcements. Copper prices, for example, had dropped significantly, affecting markets such as Zambia and the Democratic Republic of Congo (DRC).

Oil prices were down by over 7% over the past month, prompting BMI's oil and gas team to revise their Brent crude forecast to an average of $68/bl, down from $75/bl. Lower oil prices could benefit net importers such as

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AVIATION

Boeing opens new regional office for African continent

US AEROSPACE giant Boeing has opened a new office, in Addis Ababa, the capital city of Ethiopia. This office is intended to be the group's administrative hub for its activities and operations across the continent.

"Boeing's expanded footprint in Africa is a testament to our commitment to the region's aerospace industry," affirmed Boeing Middle East, Türkiye, Africa, and Central Asia president **Kuljit Ghata-Aura**.

"This office will allow us to work closely with our more than 60 customers on the continent, forge strategic partnerships, enhance safety standards and contribute to the ongoing efforts to expand Africa's aviation industry, which is a key driver of the region's economy."

This is not Boeing's first office in Africa. The group also has an office in South Africa (Johannesburg). In addition, it has field service representatives in Algeria, Egypt, Ethiopia, Kenya, Morocco, South Africa, Tanzania and Togo.

"Africa is among the most promising markets in terms of economic and business growth," highlighted Boeing Africa MD and Addis Ababa office head **Henok Teferra Shawl**. "Being closer to our customers, government stakeholders, and suppliers will enable us to develop solutions that best address the needs of Africa's aviation sector."

Boeing has been involved with the African aviation sector for more than 75 years. It has invested in the development of talent, promoted innovation, and helped with the development of industrial bases, across the continent. It has partnerships worth some $40-million with suppliers in Ethiopia, Morocco and South Africa. The group has also, since 2008, invested $22-million in joint projects with universities and non-profit organisations to assist with systemic educational improvements and economic empowerment across the continent. And it has supported free trade and market liberalisation.

The group is the number one supplier of airliners to African carriers. It works closely with them to modernise their fleets and reinforce safety standards.

REBECCA CAMPBELL
SENIOR DEPUTY EDITOR

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Customs in a clean age

If you are involved in the renewable energy value chain – specifically the solar PV value chain, wind energy value chain, and battery energy storage system (BESS) value chain – then your participation in the review of the customs tariff structure for input materials, components and final goods used in these sectors should be a given. So, grab your calendar and circle May 15, the final day for comments.



Riaan de Lange

If you are uncertain about whether you should participate, then here is a reminder of the respective value chains: the solar PV value chain encompasses the entire process of creating and deploying solar panels and systems, from raw material extraction to installation and end-of-life management; the wind energy value chain encompasses the complete process from resource extraction to end-use, involving material sourcing, component manufacturing, turbine assembly, project development, installation, operation and maintenance, and, ultimately, decommissioning and disposal; and the BESS value chain encompasses the entire process from raw material extraction to battery recycling, including manufacturing, assembly and end-use applications.

This is an International Trade Administration Commission of South Africa (Itac) self-initiated review pertaining to interested parties – domestic manufacturers and importers, in Botswana, Eswatini, Lesotho, Namibia, and South Africa (the BeLNS countries). These are all Southern African Customs Union member countries. The review's focus is on 156 tariff subheadings, with 66 (42.31%) pertaining to the solar PV value chain, 44 (28.21%) to the wind energy value chain, and 46 (29.49%) to the BESS value chain.

Three reasons were cited for the review: global decarbonisation commitments, which present new opportunities for the growth of a strong South African supply base of renewable-energy components and finished products, battery storage units, and green consumer goods; the domestic demand trajectory, raw materials resource base, technological capacity and manufacturing experience, which, combined, place South Africa in a potentially strong position to become a key player in regional and international supply chains; and the fact that, when carefully balanced, an improved tariff structure will increase the demand for, and supply competitiveness of, locally manufactured products and components – this will further enable export market opportunities and enhance the competitiveness of the local renewables value chain.

Should you be interested in participating, Itac's guidance is that your comments should be in respect of the following: the possibility of increasing ordinary customs duties on some of the tariff subheadings listed in the review of their respective World Trade Organisation bound rates, to the extent that there is capability or potential to manufacture them domestically in order to improve the overall tariff structure and the effective rate of protection, or EROP; the possibility of creating rebate items for some of the products on this list to the extent that they are input materials to downstream manufacturing activities and are not manufactured domestically; the potential discontinuation of the rebate item that makes provision for the duty-free importation of solar PV panels, provided that installed domestic capacity reaches at least 50% of domestic demand, in order to incentivise further investments in the domestic assembly and manufacturing industry; and proposals on the identification of additional products in the renewable energy value chain to be subjected to local content requirements. This is to be done in collaboration with the Department of Trade, Industry and Competition under the framework of the new Public Procurement Act, 2024, once the regulations for the policy have been developed.

Comments may also be submitted in respect of the potential relaxation of import control regulations for any critical minerals, or any other product, used as input material in downstream manufacturing activities in the renewable-energy industry, particularly in battery storage technologies, to the extent that this would incentivise domestic manufacturing and investment, and the potential introduction of export control regulations for any critical minerals, or any other product, used as input material in downstream manufacturing activities in the renewable- energy industry, particularly in battery storage technologies, to the extent that this would ensure security of supply and incentivise domestic manufacturing and investment.

If you are interested in obtaining more information on the review, please consult Government Gazette notice 3142 of April 17, which is also referred to as 'Customs Tariff Applications – List 04/2025'.

● *This economic and trade-focused column is prepared by Riaan de Lange – riaan@tariffandtrade.co.za. The views expressed in this column are the author's personal views*

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Kenya, Ethiopia and South Africa. However, the impact on oil-exporting countries would be substantial. Congo-Brazzaville and Gabon were identified as highly exposed, with Angola also facing serious challenges owing to the likelihood of exchange rate instability and rising inflation. Morley warned that tariffs would also worsen fiscal challenges in the region. Eurobond yields for key sub-Saharan African economies had risen sharply since the tariff announcement, with yields in countries such as Nigeria, Kenya and Ghana reaching around 10%, effectively excluding them from international capital markets. Nigeria, for example, had planned to issue a $1.7-billion Eurobond to finance its 2025 budget deficit.

As a result of constrained access to external financing, many governments would likely turn to domestic borrowing, increasing their debt servicing burdens. Morley noted that interest payments already consumed about 25% of government revenue in sub-Saharan Africa, limiting fiscal space for improving public services or investing in development.

She added that these economic pressures were expected to heighten political risks. Many sub-Saharan African countries were already experiencing elevated political risk and the shifting trade environment was likely to exacerbate policy and social challenges.

Morley pointed out that deteriorating economic conditions could result in job losses and growing anti-government sentiment, and could intensify existing armed conflicts – particularly in commodity-dependent States.

In the DRC, she explained, copper exports provided about one-third of government revenue. The recent drop in copper prices would severely restrict the government's capacity to finance military operations, especially in the eastern provinces, where rebel groups had

AFRICA BEAT

The carbon credit catch

Africa contributes just 3% to global carbon emissions yet endures a wildly disproportionate share of the climate fallout – from deadly heatwaves to floods, cyclones and relentless droughts. Now, as the world scrambles for solutions, overseas companies that are unable to cut their own emissions are turning to the continent's carbon markets to offset them.



Martin Zhuwakinyu

Carbon offsets occur when polluting entities buy carbon credits from projects that reduce emissions – such as renewable-energy projects or reforestation efforts – to compensate for emissions they cannot avoid through operational modifications.

Africa, endowed with natural carbon-sequestration environments, such as dense rainforests, expansive grasslands and renewable-energy potential, holds significant leverage in this emerging market. Although still in their nascent stages, African carbon markets are forecast by the Africa Carbon Markets Initiative to generate between 1.5-billion and two-billion carbon credits yearly, potentially unlocking revenues of more than $50-billion a year by 2050.

Two African countries – Gabon and Kenya – have made impressive strides in this space. While employing different strategies, their goal is the same: turning environmental stewardship into economic value.

Gabon, which boasts 88% forest cover and is often called 'The Lungs of the Planet', has chosen the forest conservation route, inking a landmark agreement with the Central African Forest Initiative in 2021 that saw it receive $17-million as the first of multiple tranches to be disbursed over a ten-year period, contingent on the Central African country maintaining low deforestation rates.

Kenya, on the other hand, has decided to advance a regulatory and legislative framework aimed at integrating carbon credits into its economic planning. To this end, it crafted a Bill in 2023 paving the way for a Carbon Credit Trading and Benefit Sharing Authority, which aims to register, monitor and regulate carbon credit transitions in the country, particularly those involving foreign entities. Importantly, the proposed law includes a benefit-sharing formula that ensures communities hosting carbon projects receive a fair share of the proceeds.

Kenya has already made significant headway, with initiatives under way including the Kasigau Corridor REDD+ project, which protects hundreds of thousands of hectares of dry-land forest in the south-west of the country and has issued millions of carbon credits on the voluntary market. Proceeds from the sale of the carbon credits have been used to build schools and healthcare facilities, while a significant number of jobs have been created.

The Gabonese and Kenyan experiences prompted one commentator to suggest that "green is the new gold" for Africa.

However, not everyone shares this optimism, with concerns around power dynamics and price inequality, for example, having been raised. And those voicing these concerns include none other than African Development Bank (AfDB) president **Akinwumi Adesina**, who told the UK's Financial Times newspaper last month: "We used to have land grabs. Now we are having carbon grabs. The cost of getting permits in Europe probably can be as high as €200 a ton. Or you can get it in Africa for €3. Countries are losing vast areas of forest, vast areas of land, to what I call a carbon grab."

Adesina, who steps down in September after a decade at the helm of the AfDB, did not go so far as to name and shame the companies buying African carbon credits at rock-bottom prices while paying a premium to European sellers.

His concerns echoed those voiced by several prominent figures in the environment-protection space at a panel discussion hosted by the UN University Institute for Natural Resources in Africa in December.

One of the most powerful criticisms came from **Gertrude Kenyangi**, executive director of the organisation Support for Women in Agriculture and Environment in Uganda. In her remarks, she argued that "the current narrative around carbon markets masks a deeper concern: neocolonialism in disguise, with power asymmetries skewed in favour of the North".

Despite these criticisms, several panellists agreed that carbon markets, if properly designed and equitably managed, could be a force for good. Equally important is a united African voice that can negotiate from a position of strength. If these conditions are met, then green may indeed be the new gold for Africa – and this time the continent could own the mine.

● *Dr Zhuwakinyu, who holds a PhD in communication (media studies) from the University of South Africa, is Creamer Media senior deputy editor – martinz@engineeringnews.co.za*

already seized significant territory.

She also highlighted that high gold prices – driven by increased demand for safe-haven assets – could worsen security dynamics. Much of the gold sector in the DRC remained informal and under the control of rebel factions.

"While the DRC does export some gold through official channels, the sector is largely informal, with many gold mines being controlled by rebel groups," she said.

Higher prices would enable these groups to finance and expand their operations and incentivise them to seize more gold-producing areas. Morley noted a positive correlation between gold prices and security incidents in the DRC's eastern provinces, indicating that conflict would likely intensify as gold prices remained high. Morley further warned that the tariff-driven decline in oil prices could increase the risk of conflict in South Sudan. Although the 2018 peace agreement had reduced violence, recent political tensions had risen, exacerbated by the detention of South Sudan VP **Riek Machar**'s child in March. Given that oil accounted for the bulk of South Sudan's exports and operating revenue, the decline in prices threatened to destabilise political patronage systems and essential government functions.

Mozambique was also identified as being at risk of rising protest activity owing to the broader economic fallout from tariffs. Although its direct exposure to the US was limited, its reliance on coal and liquefied natural gas exports made it vulnerable to slumping global commodity prices.

Combined with fiscal challenges following World Bank support in 2024 and post-election unrest, the weakening Mozambican metical could drive up living costs and revive public dissent.

SMART MANUFACTURING

Smart Storage

Huawei unveils AI-driven green warehouse in Joburg

NATASHA ODENDAAL | CREAMER MEDIA SENIOR DEPUTY EDITOR

Huawei South Africa has showcased its newly opened 14 000 m² artificial intelligence- (AI-) powered, green intelligent warehouse in Johannesburg.

This smart facility boasts advanced technologies and intelligent systems to enhance efficiency and security and reduce costs, which the company says marks a major step forward for the logistics and warehousing sectors.

The warehouse, driven by Huawei's green power solutions, e-security systems and modern logistics (GEM) framework, showcases the positive role that smart logistics can play in Africa as the industry continues to grow, says Huawei South Africa CEO **Will Meng.**

The GEM framework is delivered through a digital warehouse management system, which makes it possible to automate 60% of daily processes.

"The warehouse and logistics market in South Africa was valued at $93-billion in 2024 and is poised to reach $157-billion by 2032," Meng continues.

"This growth signifies more than just numbers; it represents a transformation towards more agile, responsive and technologically advanced supply chains, which are essential for maintaining a competitive edge in today's rapidly evolving marketplace."

In line with the green power solutions component of the GEM framework, the facility uses a 150 kWp photovoltaic system supported by Huawei's SUN2000-100KTL-M2 inverter on each building, which generates around 90% of the facility's daytime energy needs, explains Huawei South Africa supply chain business logistics manager **Stevin John du Plessis**.

This provides a sustainable model to mitigate against the increasing pricing of electricity.

"Businesses of today are looking at creative ways to protect revenue," adds Huawei Digital Power South Africa senior solutions manager **Herman Fourie**, noting that Huawei's smart warehouse solution enables companies to meet their own energy needs and achieve further returns on investment by trading excess power back to the grid.

Under the e-security feature, an intelligent camera system provides 24/7 full-colour clear coverage, even when there is no light at night, and AI-enabled features to detect safety hazards and security incidents.

The cameras have front-end AI capability, reducing the pressure of back-end recognition.

"This system removes the need for large control rooms while enhancing overall safety and security within the warehouse and leaving more space for products to be stored."

In the warehouse, cameras are connected through Huawei's optical solution, allowing real-time monitoring of all operations.

Meanwhile, the modern logistics component ensures that the picking operation in the warehouse is 100% paperless, using PDA scanners for real-time operations.

The role of warehouse pickers at the smart facility has also evolved owing to the use of automated guided vehicles (AGVs) and automated guided forklifts (AGFs).

"Traditional warehouses rely on pickers to fetch goods and bring them to outbound stations. The smart warehouse transforms this role by using AGVs and AGFs to automate this work by bringing goods to a picker."

This increases efficiency by enabling pickers to process around 110 lines an hour compared with traditional warehouses that process only up to 60 lines an hour. It also speeds up loading times and helps workers avoid the potential hazards of operating heavy machinery.

"These intelligent AI-led solutions allow the facility to achieve an overall increase in efficiency of between 70% and 80% when compared with traditional warehouses," says Du Plessis.

"Our warehouse management system unifies all logistic operations, integrating AGVs and AGFs to provide intelligent task allocation and scheduling," adds Huawei South Africa enterprise marketing and solutions director **York Ning**, noting that the smart systems enable staff members to work side-by-side with autonomous technology and improve employee productivity by 37%.

Africa Global Logistics, which has 23 000 people across 50 countries, plans to integrate Huawei technology into its operations as it expands in Africa. "We have been logistics partners with Huawei for 15 years now, and have extended our partnership further with the procurement of their technology which has helped Africa Global Logistics achieve operational excellence and streamline our processes," explains its COO, **Fergus Fitch**.

PLATINUM

Digital platinum investment soaring

A DIGITAL platform that makes investing in platinum easier than ever before is reaping rewards.

In the first three months of 2025, the volume of platinum sold on the DigiPlatinum investment platform soared by 133%, the World Platinum Investment Council reported in a media release to *Engineering News & Mining Weekly* on Wednesday, April 23.

The number of customers buying platinum on the website is also up 23%, and total weight 50% higher than the corresponding quarter of last year.

Digital platinum can be accessed 24 hours a day, seven days a week from anywhere in the world, with investment in digital platinum differing from investing in bars and coins in as much as it allows the ownership of a fractional amount of platinum, based on value rather than weight.

Unlike bars and coins, digital platinum buying is exempt from value-added taxation.

Once an investment is made, the investor has legal title to the platinum purchased, with the Royal Mint exercising custodianship alone.

"We've designed a secure digital platform that makes investing in precious metals easier than ever before," Royal Mint digital platinum investment platform divisional director **Andrew Dickey** noted.

Investment-grade platinum bullion bars stored in the mint's vault physically underpin the amount of digital platinum owned.

The savings achieved by economies of scale are passed on to investors through minimised premiums and storage fees.

The Royal Mint has worked with precious metals for more than 1 100 years. It made the largest-ever platinum coin in 2022 to coincide with the year of the platinum jubilee of the late Queen Elizabeth.

Made from 95% fine platinum, the dimensions of the jubilee coins are 43 mm x3 mm, with each gram of the 70 g of pure platinum representing a year of service.

Members of the World Platinum Investment Council include South Africa's Anglo American Platinum, which is soon to renamed to Valterra Platinum, Impala Platinum, Northam Platinum, Royal Bafokeng Platinum, Sedibelo Platinum and Tharisa.

MARTIN CREAMER
PUBLISHING EDITOR

AN

PEOPLEINCAMERA

SUPPORTING INTELLECTUAL PROPERTY (IP) protection in the creative industry will ensure that the economy succeeds in producing outputs that are of global standards. This was said by the Department of Trade, Industry and Competition's innovation, technology policy and strategy director Nontombi Maseko (pictured). She was speaking at the World Intellectual Property Day (WIPD) celebrations in Umlazi, KwaZulu-Natal, on April 26. According to Maseko, these global standards will stimulate growth and development, while creating sustainable employment opportunities. The WIPD celebration aimed to create a general awareness of IP by educating students, the music sector and the public about the role and importance of IP in music. The event was a partnership comprising the Companies and Intellectual Property Commission, Small Enterprise Development and Finance Agency, National Intellectual Property Management Office, Technology Innovation Agency, Durban Film Festival and the Mangosuthu University of Technology.





ON APRIL 24, the Gauteng Department of Roads and Transport launched the Public Transport Women's Help Desk. At the event, Gauteng Roads and Transport MEC Kedibone Diale-Tlabela (centre) stated that the occasion marked a "profound moment in the journey towards justice, equity, and transformation in our public transport system". She added: "The launch of the Public Transport Women's Help Desk is both a practical response and a powerful symbol; a response to historical, long-standing challenges [and a] symbol of change that is not just promised but delivered." The Help Desk is meant to serve as a central point of support, advocacy, information and redress, where women in the transport sector can share their grievances and access the many tools needed to grow and thrive. This includes legal support on compliance with relevant sector legislation, access to training opportunities, business development resources, or assistance with reporting abuse. "This facility is designed to walk with women at every stage of their journey to success."



AUTOMOTIVE COMPANY MCLAREN raised an impressive R250 000 for the Ann van Dyk Cheetah Centre, near Hartbeespoort. McLaren CEO Zak Brown collaborated with Motorsport South Africa and South African-born international motorsport administrator Dieter Rencken (pictured) to raise much-needed funds for the centre. "This time McLaren donated a 2024 race-used Lando Norris F1 suit – an exceptional item for an exceptional cause," said Brown. The suit, which comes with a Certificate of Authenticity, was auctioned through the Hall of Fame Collection, and worn during Norris's 2024 season where the British driver led the charge to help McLaren win their first FIA World Constructors Championship since 1998 and their ninth title. The monies raised from this exclusive auction will underwrite the installation of solar-powered wireless cameras at the Ann van Dyk Cheetah Centre – bolstering security for its endangered big cats. In total, Rencken, MSA and McLaren have raised R750 000 for the Ann van Dyk Cheetah Centre.

PUSH PAUSE

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LEANNE TAYLOR

SYSPRO last month announced the appointment of **Leanne Taylor** as chief revenue officer. Taylor is a seasoned executive with extensive experience scaling global businesses, executing high-impact deals and leading digital transformation initiatives. She most recently served as senior VP of group commercial strategy at Cloud Software Group, where she oversaw a multibillion-dollar business.



SHAWN HEYNS

Kyocera Document Solutions South Africa has appointed **Shawn Heyns** as product support engineer. He is an industry veteran who brings deep experience and a hands-on, solutions-driven mindset to the role. He began his career in the printing industry in 2003 and has spent more than two decades developing a reputation for problem-solving, and customer-focused service.



WASTE MATERIAL FROM the construction sector can now be used in an "innovative" green building block used to build low-cost Reconstruction and Development Programme houses through a Department of Science, Technology and Innovation (DSTI) Circular Economy Demonstration Fund aimed at demonstrating proven circular economy interventions. This milestone was marked last month by national research institution Council for Scientific and Industrial Research, which partnered with nonprofit company Use-It Waste Beneficiation and Key Bricks, to demonstrate the prototype. The DSTI socioeconomic innovation partnerships deputy director-general Dr Mmboneni Muofhe (second from the left) and CSIR Hosted Programmes executive manager Bongani Memela (third from the left) presided over the ribbon-cutting ceremony for the newly built demonstration house.

By Sheila Barradas | Senior Deputy Editor

Richards Bay liquid natural gas bulk terminal



Name of the Project
Richards Bay liquid natural gas (LNG) bulk terminal.
Location
Port of Richards Bay's South Dunes precinct, in KwaZulu-Natal, South Africa.
Project Owner/s
Zululand Energy Terminal (ZET), a joint venture between Dutch company Vopak Terminal Durban and State-owned entity Transnet Pipelines, which is responsible for South Africa's strategic fuel pipeline assets.
Project Description
ZET officially signed the terminal operator agreement with South African State-owned entity Transnet National Ports Authority to design, develop, build, finance, operate and maintain the LNG terminal for 25 years in February 2025. The liquid bulk terminal will serve as a catalytic project for the Port of Richards Bay masterplans, which form part of the larger KwaZulu-Natal Logistics Hub Programme.
The project will be developed in two phases. Phase 1 involves the development of a floating storage unit (FSU) with a capacity of 135 000 m^3 to 174 000 m^3, onshore regasification infrastructure capable of producing 400-million standard cubic feet a day, and optional truck loading facilities. A new pipeline connection will link the terminal to the Lilly pipeline through Empangeni, with a tie-in point for Richards Bay Industrial Development Zone customers. Phase 2 entails the construction of an onshore storage tank with a capacity of up to 220 000 m^3, replacing the FSU. This phase will increase send-out capacity to about 60-million standard cubic feet a day, accommodating planned gas-to-power projects in Richards Bay and future gas users nationwide.
Potential Job Creation
Not stated.
Capital Expenditure
Not stated.
Planned Start/End Date
The commercial operation date for Phase 1 is targeted for 2028.
Latest Developments
A final investment decision is expected in 2026, contingent on timely customer commitments.
Key Contracts, Suppliers and Consultants
Wood (pre-front-end engineering design).
Contact Details for Project Information
Vopak Terminal Durban, tel +27 31 4669200 or email **Thembani Mazibuko** at thembani.mazibuko@vopak.com. ZET, email info@zlet.co.za/commercial@zlet.co.za; or **Samukelisiwe Mabele** tel +27 63 012 3673/ **Mfundo Ndwandwe** tel +27 83 555 7459.

Virginia Solar Park



Name of the Project
Virginia Solar Park.
Location
Free State, South Africa.
Project Owner/s
Integrated African independent power producer Red Rocket South Africa.
Project Description
The solar park forms part of Bid Window 6 of the Renewable Energy Independent Power Producer Procurement Programme.
The 275 MWp wind farm will prevent the emission of 720 900 t of CO_2 emissions a year and meet the energy needs of 210 000 households.
Potential Job Creation
The project will contribute more than 330 full-time-equivalent jobs during construction and operations.
Capital Expenditure
Not stated.
Planned Start/End Date
The project is expected to come on line in 2026.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
China State-owned enterprise PowerChina, and Green Whistle (turn-key engineering, procurement and construction contract).
Contact Details for Project Information
Red Rocket, tel +27 21 418 3940 or email communications@redrocket.energy

Rincon lithium expansion project



Name of the Project
Rincon lithium expansion project.
Location
Lithium triangle, Argentina.
Project Owner/s
Global mining company Rio Tinto.
Project Description
The project comprises brine extraction using a production wellfield, processing and waste facilities, as well as associated infrastructure. The project uses direct lithium extraction technology, a process that supports water conservation, reduces waste and produces lithium carbonate more consistently than other methods. It also entails expanding Rincon's capacity to 60 000 t/y of battery-grade lithium carbonate, and includes a 3 000 t starter plant and a 57 000 t expansion plant. Rincon's mine life is expected to be 40 years.
Potential Job Creation
Not stated.
Net Present Value/Internal Rate of Return
Not disclosed.
Capital Expenditure
$2.5-billion.
Planned Start/End Date
Construction of the expanded plant is scheduled to start in mid-2025, subject to permitting. First production is expected in 2028, followed by a three-year ramp-up to full production.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
Not disclosed.
Contact Details for Project Information
Rio Tinto, email mediaenquiries@riotinto.com.

Australia-Asia Power Link



Name of the Project
Australia-Asia Power Link (AAPowerLink).
Location
Northern Territory, Australia.
Project Owner/s
Renewable-energy company SunCable.
Project Description
The project proposes to develop the world's largest renewable-energy generation and battery energy storage precinct in the heart of the Northern Territory, along with an estimated 5 000 km high-voltage direct current (HVDC) system to deliver up to 6 GW of 24/7 green electricity to industrial customers in Darwin (DarwinLink) and Singapore (SingaporeLink). The DarwinLink is the Australian component of AAPowerLink. The project will establish the world's largest integrated renewable-energy and storage precinct in the Barkly region of the Northern Territory, as well as an 800 km overhead transmission system to supply up to 4 GW of 24/7 renewable electricity to industrial customers in Darwin. SingaporeLink is the international transmission component of AAPowerLink. It includes a 4 300 km HVDC subsea cable system, from Darwin through Indonesia, to supply Singapore with an estimated 1.75 GW of 24/7 renewable electricity. The project is expected to abate six-million tonnes of CO_2 a year, supporting Singapore's goal to reach net-zero emissions by 2050.
Potential Job Creation
The project is expected to create a significant number of jobs in the Northern Territory – 1 750 direct jobs during construction, about 6 800 jobs during every year of construction and about 350 long-term operational jobs. In Indonesia, about 7 500 jobs are expected to be created.
Capital Expenditure
$24-billion.
Planned Start/End Date
A final investment decision on the DarwinLink is expected in 2027. A four-year construction phase will start from 2028.
Latest Developments
SunCable is working with the Indonesian government to agree a route for the subsea cable system to traverse Indonesian waters, following a path of minimal impact on the natural environment.
Key Contracts, Suppliers and Consultants
Guardian Geomatics (cable route survey).
Contact Details for Project Information
SunCable, email info@suncable.energy.

Southern Mining Area Decline



Name of the Project
Southern Mining Area Decline (SMAD).
Location
South Australia.
Project Owner/s
Australian multinational mining and metals public company BHP.
Project Description
The underground development will enable a new surface access decline.
The SMAD will unlock up to 2.5-million tonnes a year of additional vertical capacity and support future mine expansion options.
Potential Job Creation
Not stated.
Net Present Value/Internal Rate of Return
Not stated.
Capital Expenditure
About $200-million.

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Planned Start/End Date
The project is expected to be completed in the 2028 financial year.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
Not disclosed.
Contact Details for Project Information
BHP (Olympic dam head office),
tel +61 8 6718 8888.

Strategic fuel storage project



Name of the Project
Strategic fuel storage project.
Location
Musandam, Oman.
Project Owner/s
Omani global integrated energy group OQ.
Project Description
The project, covering about 100 000 m^2, will include storage tanks, a warehouse, a control room, a pump area, a truck loading zone and fire safety systems. The storage facility, which will have a storage capacity of more than 14 500 m^3, will serve as a strategic reserve for various fuels, including petrol (91 and 95), oil gas, and jet fuel, ensuring uninterrupted supply during emergencies.
The project includes a fuel tank terminal and a marine facility to receive ships. The terminal will have a platform for receiving products, connected to a pipeline at a depth of about 39 m. The platform will be powered by solar and wind energy. The pipeline will comprise two 31-cm-diamater lines, each 2 km long, and will be accompanied by a parallel fibre-optic cable.
Potential Job Creation
Not stated.
Capital Expenditure
$204-million.
Planned Start/End Date
The project is expected to be ready to receive products in October 2026, and operational by December of the same year. Full completion is slated for April 2027.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
Not disclosed.
Contact Details for Project Information
OQ, tel+968 2457 3100.

South West Arkansas project



Name of the Project
Renewable hydrogen production facility.
Location
Vaggeryd, Jönköping County, in southern Sweden.
Project Owner/s
Green and renewable hydrogen pioneer Lhyfe.
Project Description
The project involves the construction of a facility capable of producing up to 4.4 t/d of green hydrogen, based on 10 MW of installed electrolyser capacity.
Potential Job Creation
Not stated.
Capital Expenditure
Lhyfe has received about €11-million from the Klimatklivet investment programme, which represents about 35% of the total estimated investment cost for the project. The investment will fund the development and design phases, equipment procurement and construction work.
Planned Start/End Date
First production is expected in 2027.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
No information provided.
Contact Details for Project Information
Lhyfe, email investors@lhyfe.com.

Golden Pass export terminal project



Name of the Project
Golden Pass export terminal project.
Location
Sabine Pass, Texas, in the US.
Project Owner/s
Golden Pass LNG Terminal, a partnership between QatarEnergy and ExxonMobil affiliates.
Project Description
The project will add natural gas liquefaction and export capabilities to the existing terminal at Sabine Pass.
The current terminal facilities include five 155 000 m^3 liquefied natural gas (LNG) storage tanks, two marine berths capable of offloading various-sized ocean-going LNG carriers, and process facilities capable of regasifying LNG to produce about two-billion standard cubic feet of natural gas a day.
The project will use the existing state-of-the-art tanks, berths and pipeline infrastructure while new facilities for natural gas pretreatment and liquefaction will be built.
The project includes construction of three liquefaction process trains, with a total output of about 18-million metric tons a year.
Each process will have an estimated nominal output of 5.2-million metric tons a year; associated treatment, power and utility systems; and interconnections to existing import facilities and controls. Modifications will also be made to the existing facilities, in addition to expanding the facility's storm protection levee system, and increasing other safety and security features.
Potential Job Creation
The project will create thousands of jobs during the construction phase and more than 200 permanent jobs once operational.
Capital Expenditure
$10-billion.
Planned Start/End Date
The project is expected to be completed by November 2029.
Latest Developments
Key Contracts, Suppliers and Consultants
Not disclosed.
Contact Details for Project Information
Golden Pass LNG,
tel +1 713 324 6800/+1 877 246 4728 or
email Info@GoldenPassLNG.com.

Pacific green fertiliser plant



Name of the Project
Pacific green fertiliser plant.
Location
Horn Rapids industrial park in Richland, Washington, US.
Project Owner/s
Atlas Agro.
Project Description
The plant will be the first at-scale, low-carbon fertiliser production facility in the world, producing 700 000 t/y of nitrogen fertiliser and serving farmers across the Pacific Northwest region.
The plant will produce green nitrogen fertilisers in liquid and solid form.
The production process will use proven technologies and be powered by renewable-energy sources.
Potential Job Creation
Not yet determined.
Capital Expenditure
Not stated.
Planned Start/End Date
The final investment decision is expected in early 2025.
Latest Developments
None stated.
Key Contracts, Suppliers and Consultants
Not disclosed.
Contact Details for Project Information
Atlas Agro, tel +41 55 462 10 11 or
email info@atlasagro.ag.

COMING UP

- Ivanhoe Mines and its partners plan a phased expansion of platinum group metals and base-metal production at the Platreef project, in South Africa, through modular concentrator expansion. Phase 1 has a concentrator design capacity of 770 000 t/y. Phase 2 proposes a 3.3-million-tonne-a-year concentrator module, and Phase 3 a further two 3.3-million-tonne-a-year concentrator modules.
- British multinational oil and gas company bp plans to invest in the rehabilitation and redevelopment of several giant oilfields in Kirkuk, in Iraq, covering oil, gas, power and water, with potential exploration opportunities. The agreement with the government of Iraq covers an initial phase that includes oil and gas production of more than three-billion barrels of oil equivalent.

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ENLIT AFRICA PREVIEW

Compiled by HALIMA FROST

Organisers hope to drive shift to practicable solutions

HALIMA FROST | CREAMER MEDIA SENIOR WRITER



CONVERSATION STARTER
This year's Enlit Africa theme of 'Challenge the Status Quo' aims to push attendees past talking to action

Cape Town-based event and media agency VUKA Group says "business as usual" is no longer an option, commenting on this year's Enlit Africa 2025 theme of 'Challenge the Status Quo'.

"Industry needs to shift the conversation from theoretical to practical while focusing on actionable outcomes and developing clear insights into the next steps to bring projects to fruition or close a financing gap," says Enlit Africa group director **Chanelle Hingston**.

This year's event – to be held at the Cape Town International Convention Centre from May 20 to 22 – is also co-located with the inaugural Water Security Africa event, which was announced at Enlit 2024.

Hingston says the co-location of these events makes sense, given the interconnectedness of the water and energy sectors – an important consideration for Africa-based utilities and municipalities, consumers and infrastructure developers.

This year's event will host more than 240 expert speakers and 250 exhibitors, with executives from over 72 municipalities across South Africa expected to attend.

The keynote theme for May 20 is 'A Technology-Driven Transformation', during which CEOs from across the continent will engage in discussions about transformative technology.

Panel discussion 'Innovate or Stagnate' will feature young leaders in the energy sector on May 21. The panel aims to provoke a re-evaluation of technology choices, business models and the current pace of change, amid the global power, energy and water sectors navigating yet another transition.

The discussions will not only explore the implementation of new technologies but will also challenge utilities throughout the continent to embrace the mission of building sustainable and resilient infrastructure.

This shift is essential in a world increasingly affected by extreme weather and uncertainties owing to the ongoing effects of climate change.

"Resilience and climate-adaptive infrastructure must become standard as we advance development toward 2030," she asserts.

Tech Time

Hingston stresses that a core focus of the event will be on digitalisation, as well as an enhanced overview of the distribution grid, which, along with the implementation of technologies such as smart metering or battery energy storage, are becoming increasingly integral to utilities' functioning.

There is a continued focus on the integration of renewable energy into the existing grid infrastructure, reflecting a resurgence in energy efficiency as a topic of importance, which is mirrored in the water sector by an increased emphasis on sustainable water use.

Hingston also notes that the 'Project & Investment Network at Enlit Africa' event will be launched this year to connect financiers, developers, technology providers and

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Sponsor announces $250 000 grant

As the world celebrated Earth Day last month, global energy company GE Vernova's philanthropy arm the GE Vernova Foundation, announced its new $250 000 grant programme focused on green spaces, as an expansion of its commitments to growing "stronger, more resilient communities".

The announcement was made from the New York Stock Exchange, where foundation and company leaders from across GE Vernova rang the 'opening bell' in recognition of Earth Day.

Further, GE Vernova, with segments that include power, wind and electrification, in addition to being an exhibitor, has been announced as the Diamond Sponsor of this year's Enlit Africa event, which is being held at the Cape Town International Convention Centre from May 20 to 22.

To kick off the grant programme initiative, the foundation committed a $500 000, two-year grant to US-based nonprofit organisation Trust for Public Land (TPL) – $250 000 of which will be allocated to helping bring green spaces to underrepresented communities in Boston, Massachusetts, in the US.

This grant will support TPL's 'Parks for People' programme and will aim to revitalise public spaces in Dorchester, Roslindale and Mattapan, affording Bostonians access to a green space within a ten-minute walk.

"These new parks and schoolyards will help foster stronger, healthier communities and provide local students and residents with much-needed green spaces," said GE Vernova chief communications officer and GE Vernova Foundation president **Kristin Carvell**.

"As the foundation continues to grow, our goal is to continue putting the company's purpose – The Energy to Change the World – into practice by expanding this programme's reach to the global communities where our employees live and work," she concluded.

COUPON ON PAGE 22 E695682

• From page 36

regulators to fuel programmes such as Mission 300, which aims to facilitate 300-million Africans "electrified" by 2030.

"It will also forge connections for projects and cross-border interconnections, which will help develop transmission and generation infrastructure," says Hingston.

What To Watch Out For

In keeping with the theme of encouraging connections, Enlit Africa this year will include a new addition to the exhibition floor.

The Africa One-Stop Shop is a centralised hub on the exhibition floor for African investment agencies and trade officials to engage with the international business community on investment opportunities.

Hingston says the aim is to challenge the status quo by examining the "state of play" across technology, business models, financing, tariff structures and municipal sustainability, and question how this could be improved.

She says that the organiser is constantly looking for ways of encouraging more interaction between attendees and speakers, "allowing attendees to become active participants in the conversations that are shaping the future".

Importantly, Women in Energy continues to expand and VUKA is proud of its work with several key stakeholders to expand the focus and impact of women in the energy sector.

"This year, we are speaking to the longer-term strategies to keep women engaged in the sector, tackling this from a holistic perspective and doing a deeper dive into some of the challenges that are causing women to consider alternative career options."

She adds that VUKA also delights in the opportunity to host the financial services provider Standard Bank's Engage networking dinner at Enlit Africa, along with solutions provider Actom's networking function at an off-site, popular location.

As has been the case for the past few years, energy equipment manufacturing company GE Vernova will be the keynote sponsor on the first day, while global technology giant Siemens South Africa will once again be the keynote sponsor on the second day.

Off-site visits to various locations, including Koeberg nuclear power station, and the Golden Arrow electrification project, have been planned to help attendees gain first-hand insights into the future of electric public transport in South Africa.

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Cooling giant to unveil rebrand at event

HALIMA FROST | CREAMER MEDIA SENIOR WRITER

Instead of simply highlighting its capabilities and technologies at this year's Enlit Africa, industrial cooling specialists Industrial Water Cooling (IWC) will use the opportunity to make a statement by, for the first time, exhibiting under its new trade name NEXT Cooling.

In February, IWC and its affiliate AS Cooling Technologies India (ASCTI) officially joined the NEXT Cooling family, a member of Nooter/Eriksen, a global leader in heat recovery and steam generators. IWC has started the rebranding process and will trade as NEXT Cooling from now on; however, the company will still be registered as Industrial Water Cooling (IWC) in South Africa.

"Together, these three companies will begin a new chapter, united by a shared vision of excellence, growth and a commitment to delivering the most advanced cooling solutions to industry, including power generation, oil and gas, mining and minerals processing and other general industries," says IWC marketing and communications manager **Christine Storey**.

She adds that the three companies' combined capabilities provide a competitive edge by capitalising on a diverse portfolio of "world-class" projects, and open new opportunities to market their field-erected cooling towers, air-cooled condensers, bulk air coolers and slurry and solution cooling towers in key markets.

"As we embark on this exciting new chapter, our brand has evolved to reflect the bold vision that defines this union," she enthuses.

Changing Colours Not Quality

Having been a permanent fixture at Enlit for the last ten years, IWC's mandatory green pantone will be refreshed with the NEXT Cooling's teal, and this transformation is more than just aesthetics – "it is a statement of intent".

"The refreshed identity embraces dynamic colours and shapes, symbolising the perfect harmony between stability and innovation," says Storey.

In terms of stability, the unification will elevate IWC's deep-rooted expertise, proven reliability and industry leadership, while harmonising innovation across brands will aid IWC's "relentless pursuit of progress, cutting-edge solutions, and the ability to challenge the 'status quo', in line with Enlit's 2025 theme".

"This powerful combination positions us as a true challenger brand within the cooling solutions space – one that not only competes but reshapes the industry with forward-thinking solutions and an unwavering commitment to excellence," she asserts.

Importantly, NEXT Cooling's new visual language is an "embodiment of who we are and where we are headed: a future driven by transformation, impact, and global leadership".

With a well-established presence in South Africa and Australia through IWC, and in India through ASCTI, the group can leverage decades' worth of expertise and the strong reputation for delivering advanced, reliable industrial cooling solutions to grow its footprint.

At the heart of IWC's and ASCTI's success are their "remarkable" team of professionals, including dedicated research and development experts from tertiary education institutions such as Stellenbosch University.

"Their skills and knowledge will further enhance our extensive range of cooling towers, bulk air coolers and air-cooled condensers," Storey says.

New Name, Similar Message

IWC aims to drive five key messages to its existing and prospective clients as NEXT Cooling.

"Firstly, we aim to create exceptional client value by blending insight, innovation and technical excellence, thereby empowering clients to unlock efficiencies, ensure reliability and achieve sustainability goals," Storey says.

This, she adds, will help clients effectively serve and invest in their organisations and communities.

The second message is to drive business growth and market expansion with its combined capabilities to strengthen its competitive position, capitalise on a diverse portfolio of "world-class projects", and open new opportunities in key global markets.

Attracting and retaining top talent is its third message, as the company remains dedicated to fostering an inclusive and collaborative workplace and becoming an employer of choice for leading engineers and professionals in the cooling solutions industry.

"We must also mention demonstrating responsible leadership," says Storey, citing the numerous International Organisation for Standardisation certifications and the company's proven commitment to governance and sustainability, which has helped it set benchmarks for safety, quality and environmental responsibility.

Finally, "building a sustainable future together" is at the heart of this partnership and is a shared vision to create value for generations to come.

Key focus areas for the group include innovation through advancements such as hybrid cooling towers, plume abatement technologies and air-cooled condensers, says Storey.

Moreover, NEXT Cooling will continue to drive collaboration through client-based partnerships to develop custom-engineered solutions tailored to their unique project needs.

"We want to make a global impact, maintain local connections, and help support industries worldwide, all while fostering local growth through community engagement and supply chain development," concludes Storey.



LOOKING UP
The joining of IWC and NEXT Cooling means only bigger and better things, according to IWC

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HALIMA FROST | CREAMER MEDIA SENIOR WRITER

In the build-up to this year's Enlit Africa 2025, electromechanical equipment manufacturer and distributor Actom announced a slew of activities taking place at its stand.

"As a platinum sponsor to the event and as one of the largest manufacturers in sub-Saharan Africa, we look forward to using the event as not only a means to engage with existing clients but to highlight our newest developments," says business development executive **Mamiki Matlawa**.

She adds that Actom, in collaboration with advanced solar energy solutions developer Sungrow, will unveil its new integrated solar inverter and transformer on Wednesday, May 21.

This "cutting-edge solution" combines two critical components into a single, streamlined unit, minimising energy losses, reducing installation complexity and ensuring "seamless integration" with existing grid infrastructure.

As solar PV plays an increasingly vital role in South Africa's energy transition, Actom's product development presents a significant step forward in addressing both technical and economic challenges in renewable power generation.

Actom affirms that this breakthrough technology will disrupt the industry, as combining solar PV inverters with advanced transformer technology will enhance efficiency, simplify large-scale solar deployment and optimise power conversion.

Actom Distribution Transformers divisional CEO **Lee Mbenge** says that, aside from the inverter, a significant portion of the solution can be designed and sourced locally, bringing convenience to aftersales support and minimising downtime when incidents occur.

"The shortfall in generation capacity has created an opportunity for cleaner, greener alternative energy sources and PV is one of them," he elaborates, adding that the integrated inverter solution minimises the amount of work needed on site during installation, testing and commissioning, as most of those processes are completed during manufacturing.

Additionally, this solution is a plug-and-play model, thus reducing the likelihood of onsite installation being affected by erroneous wiring and flawed integration.

"The entire project was novel to Actom Distribution Transformers and a lot of lessons were learnt, and there is still so much room for more development and further improvement," he says.



TRANSFORMING POWER SUPPLY
The new integrated solar inverter and transformer developed in conjunction with Sungrow will be launched at this year's Enlit



MAMIKI MATLAWA
This year Actom looks forward to being a Platinum Sponsor at the Enlit Africa expo

Further Offerings

Matlawa says, in addition to the transformer launch, Actom will also launch its new service product offering aimed at data centres.

"This division will assist in fully equipping data centres in South Africa and was conceptualised when the sector's burgeoning growth was realised," she enthuses.

Further, Actom will introduce its Engineering Projects and Contract Division, which will better engage with Actom clients on their main transmission station building services, instrumentation and electrical cabling, and switchgear installation needs.

Additionally, for the more 'tech-savvy' guests, a virtual reality space will be set up, enabling guests to "walk through" Actom's technology offering, strengthening brand awareness of the company's technological capabilities.

Challenging Event

Matlawa notes that – in line with the group's safety-focus – Actom has engaged with the stand builders and developers that will construct its Enlit stand.

This includes ensuring that the entire stand is prepared, inspected and ready for the opening day.

Actom will be moving a range of its products from its Gauteng-based manufacturing plants to showcase at the Cape Town event, she says, adding "this has posed a range of challenges which we are ready to face if they should arise".

"Unfortunately, the size of the new transformer means we cannot have one at the stand, but we will have a three-dimensional scale model of one for clients to see and interrogate," she says.

She concludes that not only will about 40 staff members and technicians from Actom's various divisions be on hand to assist and engage with clients, but its group CEO and MD are also expected to attend, alongside other higher-ranking executives.

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State-of-the-art tech on display at Enlit

HALIMA FROST | CREAMER MEDIA SENIOR WRITER

Products and solutions such as the Blue gas-insulated switchgear (GIS), Internet-of-Things-based decision-making tools and digital integration process technologies are only a few of the "state-of-the-art technologies" on display at technology giant Siemens South Africa's stand at Enlit Africa 2025.

Siemens will also be highlighting its holistic Security Circle offering and its robust communication networks, which are designed to enhance operational resilience and cybersecurity.

"Our stand will feature interactive displays of our cutting-edge technologies and solutions for the energy sector," says Siemens South Africa sub-Saharan Africa CEO **Sabine Dall'Omo**, adding that Siemens representatives will be at the event to engage with attendees and discuss how Siemens can support their energy needs.

On Topic

"I hope to highlight how our solutions are designed to maximise grid performance, boost productivity, enhance grid capacity and improve operational resilience, all contributing to a sustainable and inclusive energy future for Africa," she tells *Engineering News*.

Siemens representatives will cover various topics such as real-time monitoring, smart automation, intelligent energy flow management and clean energy integration.



THE GIS'T OF IT
Siemens will be highlighting its Blue gas-insulated switchgear at this year's Enlit Africa

"These sessions will demonstrate how our interoperable, flexible and open technologies can make digital transformation easier, faster and more impactful for African utilities," lauds Dall'Omo.

Additionally, these sessions will provide valuable insights into how its technologies are enhancing digital transformation, particularly in areas relating to grid optimisation and cybersecurity.

> *"We hope to achieve several key takeaways from the event, including strengthening partnerships with African utilities, showcasing our latest technological innovations, and demonstrating our commitment to supporting Africa's energy transition."*
>
> — SABINE DALL'OMO

Engaging Enlit Elite

Dall'Omo points out that events such as Enlit Africa are crucial for driving the transition to a more sustainable future.

Importantly, these events provide a platform for industry leaders, policymakers and stakeholders to share knowledge, collaborate on innovative solutions and address the pressing challenges facing the energy sector.

By fostering dialogue and partnerships, these events help accelerate the transition to sustainable, reliable and inclusive energy systems.



SWITCHING IT UP
Siemens will be displaying at its SINOVA range of low-voltage switchgear at its Enlit Africa stall

"We hope to achieve several key takeaways from the event, including strengthening partnerships with African utilities, showcasing our latest technological innovations, and demonstrating our commitment to supporting Africa's energy transition," she says.

Further, Siemens aims to highlight the benefits of its scalable digital solutions and how they can help utilities maximise grid performance, enhance productivity and support clean energy integration.

As part of the company's ethos, it is always looking to the future and exploring new ways to meet the continent's energy needs.

"This year, we'll introduce new initiatives focused on enhancing grid flexibility and resilience, as well as expand our efforts in renewable energy and digitalisation."

Dall'Omo emphasises that, across Africa, power utilities are facing some serious challenges, adding that "with the rapid growth of distributed energy resources, fluctuating electricity demand and limited grid infrastructure, operators are under a lot of pressure".

Siemens strives to lead the charge in Africa's energy transition through helping grid operators tackle complexity, improve integration, and optimise capacity.

"This perfectly aligns with Enlit's mission to address the evolving energy landscape. Our scalable digital solutions are tailored to Africa's unique needs, driving a shift towards autonomous, net-zero-ready grids that support inclusive development and economic growth," states Dall'Omo.

This year's Enlit will be held at the Cape Town International Convention Centre from May 20 to 22.

COUPON ON PAGE 22 E695692

Rethinking development in South Africa's energy communities

If the energy transition is South Africa's great leap forward, then development must be its conscience – and its compass must be human-centred. As we rewire our economy toward renewables, we cannot afford to replicate the inequalities of the past.



Rural and under-represented communities must be more than passive recipients – they must be recognised as co-creators of a new socio-economic future. This is our opportunity to reimagine energy infrastructure not just as a source of power, but as a platform for dignity, agency and long-term prosperity.

South Africa's energy transition must be more than a technical pursuit – it must also serve as a blueprint for social equity and regenerative development. For rural communities, particularly those located near energy infrastructure projects, the opportunity to build sustainable, thriving economies is real – but only if development is inclusive, intentional and locally informed.

Too often, communities have been seen as beneficiaries rather than partners. True development requires deep, ongoing stakeholder engagement to ensure evolving needs are understood and addressed. This means creating mechanisms for co-design, regular feedback and local leadership -empowering people to shape initiatives that are both relevant and impactful.

The town of Touwsrivier is living proof that this is not just theory. Over the last ten years, we have witnessed first-hand that when a community is treated as an active participant in its own development journey, the results are undeniable. From stimulating the local economy to expanding skills development and micro-enterprise initiatives, Touwsrivier illustrates how community-centred development can lead to measurable progress. For instance, the establishment of the Touwsrivier hydroponic farm not only created local employment but also introduced sustainable agricultural practices to the area. A number of graduates from the renewable energy training programme have gone on to secure jobs in the energy sector and related industries, expanding their horizons beyond the town itself. The Touwsrivier example also proves that development and impact takes times. When we aim for more sustainable change, we have to accept that it may take years to achieve, and that it falls on us, as implementing agents, to steer the course. Further, it shows us that renewable energy projects, when embedded in real partnership with local people, can serve as anchors for broader socio-economic renewal.

A renewable energy site should not exist in isolation. It should catalyse a developmental ecosystem, and for Knowledge Pele that means anchoring initiatives in skills development, industry creation and social infrastructure. By investing in local talent and enabling people to participate in the green economy, we shift from transactional support to transformational change.

Key to this shift is preparing communities for the Just Energy Transition. Training and education must be locally relevant and aligned to real economic opportunities across the energy value chain. This includes both technical and entrepreneurial pathways, ensuring long-term viability and local ownership of outcomes.

At the same time, we must create industries in communities, not just jobs from projects. Development must stimulate local manufacturing, agriculture and services that are resilient and future-orientated. When people have access to diversified livelihoods, communities move from dependency to agency.

The energy transition offers a powerful opportunity to foreground social equity. Rural and historically marginalised communities must be supported to become economic hubs – central players in a low-carbon economy that benefits them as much as the broader national agenda.

There is no single roadmap. Development is not about imposing solutions but about enabling them, recognising the interconnectedness of people, infrastructure and industry. With the right approach, renewable energy can do more than power homes; it can power potential, prosperity and purpose for generations to come.

● *Jolene Shaw, GM at Knowledge Pele since 2023, oversees operations and development programmes aimed at community impact and sustainability. She holds a Bachelor's Degree and Honours in Development Studies, a Master's in Public Administration, and is pursuing a Master of Management in Innovation Studies. Shaw is dedicated to reshaping community ecosystems for sustainable livelihoods and has received prestigious awards for her contributions.*

CREAMER MEDIA'S MINING WEEKLY

MINE WATER

Compiled by NADINE RAMDASS



Platinum miner focuses on water stewardship

NADINE RAMDASS | CREAMER MEDIA SENIOR WRITER

MARULA PLATINUM MINE
The Marula operation will undertake tailings dam water plume remediation to improve underground water treatment

Several projects to mitigate water-related risks and improve long-term water security have been implemented at platinum group metals producer Impala Platinum's (Implats') operations.

These projects align with Implats' goal of achieving a 60% improvement in water recycling and reuse by 2030.

The company's 2030 target is driven by the growing need to strengthen resilience amid water scarcity across its South Africa and Zimbabwe operations, as well as in neighbouring communities, says Implats sustainable development executive Dr **Tsakani Mthombeni**.

Implats plans to invest about R800-million over the next five years to improve water security, reduce freshwater consumption and consistently achieve water recycling and reuse targets.

The miner recycles and reuses various water sources, including treated sewage effluent, in-house and external, as well as tailings return water and process water recovered at the plant through thickener overflow recycling.

At Implats' mining operations, shaft water is pumped to surface settling dams and reused at the processing plant as well as recycled for use underground, while at the company's refineries, Implats captures condensate for reuse through steam straps, Mthombeni says.

All Implats' South African operations located in water-scarce areas use closed-loop water systems, while the Zimbabwean operations use permitted, controlled discharge methods, he adds.

Improving Water Stewardship

At Implats' Rustenburg operation, in the Bushveld Complex of the North West, a stormwater catchment dam will be constructed to improve stormwater accumulation and storage to ensure greater resilience in weather events such as floods and drought.

The project, expected to reach completion in July 2026, will result in stormwater being reused in the processing plant.

Further, two 25-million litre potable water reservoirs are being installed to mitigate water supply disruptions and water quality deterioration.

Phase 1, completed in August 2023 and commissioned in March 2024 at a cost of R130-million, involved constructing a reservoir, pumpstation and treatment plant, thereby providing potable water buffer capacity for the operation's Northern shafts and minerals processing facility.

Phase 2, currently in the design phase, entails the construction of similar infrastructure, offering similar buffer capacity for the operation's Southern shafts, once completed.

Investigations into options for decentralised water storage tanks at certain shafts are also under way, adds Mthombeni.

Meanwhile, Implats' refineries operation, in Springs, Gauteng, is also advancing several water-related projects, including an effluent treatment plant and a nickel wash water optimisation project to improve water recycling and reuse capacity, in addition to reducing freshwater intake. Both projects are planned for completion in June 2029.

The effluent treatment plant uses crystallisation for precious metals refinery effluent, resulting in solid waste and water as output materials, with the treated water subsequently being reused in the process.

Further, flow metering on the tailings thickener, expected to be completed by June 2025, is being installed at the Marula platinum mine.

Mthombeni explains that, by measuring recycled water from thickener overflows,

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Dewatering specialist emphasises planning

MARLENY ARNOLDI | CREAMER MEDIA DEPUTY EDITOR ONLINE

With mine dewatering being a complex challenge that is often overlooked during the design phase of a mining operation, original-equipment manufacturer Weir helps miners conduct comprehensive planning for dewatering scenarios.

This approach ensures that site conditions are carefully considered and future requirements are accommodated, leading to optimal performance and adaptability. While there is generally a focus on water reticulation during a mine's design phase, excess water generation and seepage are not always considered, states Weir original equipment GM **Marnus Koorts**.

He warns that inadequate dewatering strategies result in ineffective water management, which, in turn, leads to costly disruptions to mining operations and even potential safety risks.

"Successful dewatering requires a deep understanding of site-specific environmental and geological conditions, as well as operational needs, to ensure the right approach is implemented," Koorts explains, adding that no two mines are the same and that, as such, every site's dewatering requirements will vary.

Effective water management at mine sites also depends on expertise in interfacing systems, peripheral equipment and supporting infrastructure, he adds.

The successful and safe implementation of dewatering often gets complicated by electrical interfacing and other region-specific conditions that require innovative mechanical and, in some cases, buoyancy knowledge.

In terms of catering towards the unique conditions of mines in Africa, Koorts says the company's specialised services have included crocodile-proofing pontoons, heated pontoons and floating pontoons.

When undertaking new installations, Weir considers the regional and seasonal impacts on water formation to adapt dewatering solutions on site. The company also considers the permeability

• To page 50



ALL KNOWING
Effective water management at mine sites also depends on expertise in interfacing systems

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Mining technology for a sustainable future

• From page 46

Implats enhances its water accounting, optimises water recovery and improves process control, as accurate flow measurements allow for precise tracking of the amount of water being recycled. This ensures the efficient use of water resources.

Real-time data from flow meters allows for better control over the thickening process, reducing water loss and improving overall system performance.

Implats' Marula operation, in Limpopo, will undertake tailings dam water plume remediation, expected to be completed by June 2027, to improve underground water treatment.

At the miner's Bafokeng operation, adjacent to the Implats Rustenburg mining operations, the Maseve pumpstation was upgraded to improve reticulation and water-use efficiency.

Meanwhile, in Zimbabwe, Zimplats implemented process improvement initiatives to reduce freshwater consumption at the Selous metallurgical complex, translating into a 35% reduction in freshwater use during the 2024 financial year. This was done through the introduction of its new mills lubrication system cooling towers.

Zimplats recycles and reuses treated sewage effluent for lawn irrigation, with the operation achieving a 60% increase in water recycled or reused after additional recycling streams were included.



MITIGATING FUTURE RISKS
Implats plans to invest about R800-million over the next five years to improve water security and achieve water recycling and reuse targets

In the first quarter of 2024, a 3.3 km extension of the water pipeline, from Chitsuwa dam to the Ngezi weir, was commissioned to prevent unauthorised abstraction and evaporative losses along the Ngezi river tributary.

Further, a study to install a sewage water treatment facility at Zimplats' Turf Housing Complex, to enable water recycling, is expected to be completed by June 2028.

COUPON ON PAGE 22 E695712

• From page 48

and porosity of the soil, as well as other geological features.

In particular, weather variations can have a significant effect on openpit mines, and even mines operating above a water table can be subject to influxes of water caused by heavy rainfall or melting snow.

Koorts illustrates that countries with high rainfall often have more complex dewatering needs, which, if not addressed properly and flexibly, render sites unable to operate while these water issues persist.

"It is essential that dewatering systems can handle the maximum potential volume of water inflow to avoid downtime and prevent risks to safe operation."

This also rings true in South Africa, where particularly high levels of late summer rainfall over the past few years have been recorded.

Weir offers precisely designed and strongly engineered solutions for any application, with the company focusing on delivering sustainable dewatering solutions for optimal efficiency and performance during any season and in any conditions.

The company's mine dewatering pumps and equipment brands include MULTIFLO, FLOWAY, WARMAN, ENVIROTECH, GEHO and HERO.

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Mitigating failures

NADINE RAMDASS | CREAMER MEDIA SENIOR WRITER

Mines require resilient dewatering systems to prevent failures of such mission critical equipment, says water technology company Xylem Africa strategy and marketing manager Chetan Mistry.

Dewatering failures can result in wide-scale flooding of mine sites along with prolonged operational disruption resulting in a need for drainage, damage assessments and equipment recovery, as well as ensuring worker safety during such incidents.

However, modern resilient dewatering systems reduce these risks while also reducing pressure on the maintenance and management of dewatering systems.

Mining activities often release groundwater, which naturally flows into depressions created by excavation. This becomes critical during heavy rainfall or flooding, with dewatering remaining the primary method for managing such water accumulation, he explains.

In this regard, independent insurance brokerage Lockton's '2025 Mining Insurance Market Report' reveals that extreme and unpredictable weather events are becoming the primary disruptor of mining operations.

Therefore, Mistry says mines must re-evaluate their dewatering strategies to anticipate fast-changing and unpredictable weather conditions.

Pumps often handle liquids containing debris, ranging from microscopic particles to visible matter, chemicals and other abrasive materials.

Large debris can damage and ensnare impellers, while fine particles can increase liquid viscosity, creating difficult-to-pump slurries.

To mitigate these challenges, Mistry stresses the need for pumps tailored to specific dewatering scenarios at mine sites and to select the appropriate maintenance profile of commissioned equipment.

He notes that modern dewatering pumps mitigate these challenges through features such as seal failure safeguards, no-clog impellers, dry priming capabilities, variable motor speeds and high-quality strainers.

Resilient Measures

To derisk dewatering, Mistry recommends that mining operations adopt novel technologies and strategies, ranging from different types of pumps to leveraging data for predictive maintenance of dewatering equipment.

He says portable pumps can be a means to address acute and unexpected pooling of mine water.

Such products vary in size and applicability, from large pumps mounted on trailer beds, to submersible dewatering pumps that can be transported on the back of a vehicle and moved without much difficulty.

However, as emergency flooding and dewatering situations can vary at a mine site, Mistry says the choice of dewatering solutions employed depends on the predictability of such risks.

Mining operations that have a high likelihood of water seeping into shafts, or which are located in regions that experience heavy rainfall or are flood-prone, can benefit from a tailored permanently installed dewatering system.

"A mine would create a dewatering system that fits its geography, weather and costs. The mine can then augment with portable systems that it can move to specific areas," says Mistry.

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PARTNER CONTENT

Company equipped to tackle waste management complexities

Waste management is a complex issue in the sub-Saharan African mining industry. As a subsidiary of water and waste management expert SUEZ, environmental company EnviroServ is geared to effectively tackle this challenging task.

With more than 46 years of experience in shaping the future of waste management, EnviroServ remains dedicated to delivering an array of waste management solutions tailored to the needs of various sectors, including that of the mining industry.

Through SUEZ, EnviroServ has the capacity to aid mining customers with their mine water challenges. Mine water, also referred to as acid mine drainage, is caused by rain. It has proven to be rich in metals, dissolved organics and inorganics. Often, the pH is extremely low, depending on the type of mining activity conducted. It can be particularly toxic to the environment and humans, and needs to be adequately treated. Luckily, mines have contaminated stormwater dams, and when this water is acidic, it can be treated by neutralising it, depending on the chemical constituents within the mine.



MINE WATER MANAGEMENT
Through SUEZ, EnviroServ has the capacity to aid mining customers with their mine water challenges

"With our extensive resources, solid safety records and a steadfast commitment to environmental stewardship, we are uniquely positioned to assist mining operations in achieving their waste management goals effectively," says EnviroServ commercial inland senior GM **Ryan van Heerden**.

"With a focus on sustainability and cost-effectiveness, we are proud to support mining companies in their journey towards more responsible environmental practices. Our commitment to quality customer service, stringent safety protocols and innovative waste management solutions positions us as the partner of choice for the mining sector."

EnviroServ's personnel are fit, undergo the necessary medical examinations and inductions, and are equipped with personal protective equipment. The suitability of the fleet and equipment is also assessed. Additionally, the EnviroServ team adheres to the required fatality risk control protocol and standard operating procedures mandated by mines.

As EnviroServ continues to innovate and elevate its services, the company invites mining companies to partner with it.

"Together, we can navigate the evolving challenges of waste management and craft sustainable solutions that support operational efficiency and environmental integrity," states Van Heerden.

EnviroServ maintains all the necessary permits and licences, ensuring compliance across their fleet and operations. Each interaction with a customer is underpinned by the company's commitment to quality control, concludes Van Heerden.

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Compiled by DEVINA HARIPERSAD

Urgent fixes prioritised in rail revival funding plan

DEVINA HARIPERSAD | CREAMER MEDIA REPORTER



CRITICAL CHALLENGES
The allocation of funds will first target the network's most pressing challenges

State-owned rail freight company Transnet's Rail Infrastructure Manager (TRIM) outlined a structured plan to raise the funding needed to revitalise South Africa's deteriorating rail infrastructure.

The entity — which aims to mobilise capital through a combination of mechanisms, including additional debt financing, public-private partnerships and applications to the Budget Facility for Infrastructure — expanded on where it will allocate these funds, during its latest engagement with banking and asset management group Investec, on March 14.

The funding will address the most critical challenges across the network first, with TRIM outlining three focus areas that require urgent intervention: degraded infrastructure, constrained capacity and delayed maintenance. These areas will receive the bulk of the funding.

The estimated total cost of addressing these three core challenges is between R20-billion and R30-billion. TRIM aims to complete this work over a five-year period and plans to secure funding progressively throughout that time.

Degraded Infrastructure

TRIM currently manages over 21 000 km of railway tracks across South Africa, including the Ore, North, Container, Cape and North East corridors, as well as the Central Network. But the entity reported that more than 90% of this infrastructure, including tracks, signals and bridges, is in poor condition.

It stated that most of these assets are classified as being in an "impaired condition" or in the red zone, which TRIM refers to as a "degraded state".

"Deteriorating levels of asset reliability and availability result in train delays, cancelled train slots, volume loss and eventual permanent capacity loss," the rail manager explained.

TRIM identified assets such as train authorisation systems, signals and control systems; shunting yards; condition monitoring systems; security systems and weighing systems as the worst-performing components in need of immediate upgrades.

"Failure rates of the asset base are increasing. The majority of train authorisation systems are obsolete with some being more than 60 years old," TRIM said.

Constrained Capacity

TRIM also warned that one of the biggest threats to the national rail system is its

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Safeguarding South Africa's vital rail system

Railways are South Africa's most important means of transportation, providing nearly 80% of passenger transport capacity and more than 30% of the country's ore transport capacity. But it is a challenge to keep this vital infrastructure in good working order.

Thieves keep entering the tracks and restricted areas to steal essential equipment. And problems such as outdated infrastructure, old locomotives, and high maintenance costs are becoming increasingly hard to ignore. Fortunately, a Huawei solution based on vibration sensing optical fiber and AI machine vision is coming to the rescue of the country's main rail operator, Passenger Rail Agency of South Africa (PRASA).

One of the most extensive on the continent, South Africa's railway system spreads over 38 000 km of tracks. PRASA is the only integrated passenger transport group in the country, and the main provider of commuter railway services. Recently, PRASA has made significant progress in modernising passenger railway infrastructure and renovating damaged stations. In particular, it has restored railway infrastructure in Gauteng Province where Johannesburg is located. Its next ambition is to digitalise operations and become a "smart railway" operator. The group's efforts help to rejuvenate economic development countrywide.

But a constant challenge for PRASA has been theft. Especially when tracks are located near urban centres, as is the case for commuter trains, intrusions onto the railway perimeter have been frequent and resulted in heavy losses and high rehabilitation expenses. At times, wholesale plundering of certain sections of the system has led to service interruptions.

As the first layer of protection between the railway and the outside world, the purpose of the railway perimeter is to ensure safe operations. Interference near the railway perimeter poses challenges to the reliability and adaptability of perimeter protection. Such interference can be caused by vegetation and animals, complex weather conditions such as wind, rain, snow and fog, and complex social environments such as contact from pedestrians and vehicles passing by.

Safeguarding railway perimeter protection is not a new problem. Some of the main flaws of these methods include a high frequency of false positive alarms, missed alarms, and poor system stability. In addition, the data these systems collect is not centralised. This makes it harder to generate alarms and the costs of managing these independent systems is higher than it should be, demanding extensive manpower to be truly effective. As a result, a lot of efforts have been expanded on integrating multiple complementary sensing technologies and increase their ability to detect different types of threats.

Huawei's solution uses an end-to-end railway perimeter security system to implement full-process security detection. The approach combines optical technologies and machine vision (an AI that analyses video data.) The intelligent system integrates optical data with visual data into an upper-layer integrated management platform to detect, report and acknowledge alerts, implementing full-lifecycle services of the railway perimeter security system.

This highly reliable solution has been developed based on research into current state-of-the-railways, an in-depth analysis of PRASA railway operations and needs, and Huawei's industry-leading technologies such as intelligent vibration-sensing optical fiber and video AI. With the support of the AI model, vibration-sensing optical fiber, and video surveillance, the solution delivers high stability and reliability in diverse scenarios, such as strong wind and heavy rain.

"This is the world's first application of optical-visual linkage detection in railways," says PRASA CEO Hishaam Emeran. "PRASA is proud to so readily embrace innovative technologies. Huawei's optical-visual linkage perimeter protection solution truly solves actual security problems. I'm looking forward to the system being fully operational to bring our shareholder to witness this significant investment that we have made around our deport facilities to protect our assets."

Protecting the integrity of PRASA's system has implications for the whole of Africa. According to the African Union High Representative for Infrastructure Development, the lack of infrastructure interconnecting African countries is a continent-wide weakness, seriously hampering the exchange of goods, services and people. To address this issue, the African Union's Agenda 2063 proposed a cross-border railway network project for intra-Africa interconnection. The project aims to establish an integrated railway network from Egypt to South Africa to connect the entire African continent, and South Africa's railway system will be an important part of this network.

HUAWEI

New initiative doubles rail capacity on the Coal Line

DEVINA HARIPERSAD | CREAMER MEDIA REPORTER

State-owned rail freight company Transnet's continuous improvement team recently launched a 160-wagon train initiative on the North Corridor to improve slot utilisation and double network capacity, as well as reduce labour costs and running times at intermediary stations using bypass methodology.

The team sought to determine whether it could efficiently transport 160 wagons on the general freight business (GFB) flow route between Richards Bay and Saaiwater, on the North Corridor, while meeting the aforementioned objectives.

The test, conducted on February 10, 2025, marked a first-of-its-kind endeavour for the well-utilised GFB flow route.

The route, which primarily services coal freight for export and domestic use, has historically operated trains carrying a maximum of 80 wagons, explains Transnet Freight Rail (TFR) Coal Business Unit GM **Theo Johnson**.



DOUBLE CAPACITY
Transnet's continuous improvement team recently launched a 160-wagon train initiative on the North Corridor

This capacity was once sufficient but increasing operational challenges – particularly cable theft – have disrupted the system.

"This threw our rail system into imbalance, requiring constant service relief. While our security teams worked tirelessly to reduce incidents, we needed to ensure our pit-to-port customers remained satisfied," he tells *Engineering News*.

Clients along the corridor include coal producers Exxaro, Thungela Resources, Seriti Resources and State-owned power utility Eskom.

"TFR is the leading freight transporter of bulk commodities for the domestic and export markets, so we are finding new ways to better service our customers," Johnson says.

For this reason, the 160-wagon concept was formally adopted in July 2024, following a feasibility study by the train designs technology management, operations management and continuous improvement teams. The plan prioritised capacity expansion to address growing backlogs on the GFB flow.

"However, the study revealed that there were infrastructure limitations. Some yards along the route couldn't accommodate 160 wagons," Johnson adds.

This led to the team's adapting the strategy to include bypass options, focusing on loop-line analysis between Ermelo and Saaiwater for route deviation.

Once the yards to be bypassed were identified, attention shifted to locomotive configuration.

"The minimum configuration needed to operate a train of this length is two 22E locomotives, but to support resource balancing on the return leg, we concluded that four 22E class locomotives would be required," he elaborates.

An additional telemeter was also installed to help manage and coordinate the longer train.

Operational Hurdles

Once technical preparations were complete, only a few obstacles remained.

"Prior to departure, Richards Bay was affected by a long-standing integrated train plan delay, owing to a Bhizolo power outage, which disrupted the signalling system into the Richards Bay Skoonkaai yard, along the GFB flow.

"On the section between Ermelo and Saaiwater, two incidents involving hanging contact wires caused the lead locomotive to register a pantograph – the hinged, roof-mounted device that collects electric current from overhead wires – malfunction," he notes.

As such, additional speed restrictions required close monitoring to ensure safe passage.

The empty wagons, pulled by four locomotives, completed the journey in 17 hours at an average speed of 60 km/h. Johnson confirms that the team achieved nearly all its operational targets, including reduced cycle times.

The continuous improvement team told *Engineering News* that it was satisfied with the outcome, which aligned with Transnet's broader objective to improve operations.

Consequently, a second test-run followed, from Richards Bay to Ermelo, with a split of two 80-wagon sets on arrival.

Johnson adds that there are plans to implement this configuration on a regular basis.

"The project will move into the implementation phase once the Railway Safety Regulator grants approval to officially run the train. We plan to start with one train a week and gradually increase the frequency.

"Transnet looks forward to the regulator's feedback and aims to improve the weekly flow of loaded wagons to Richards Bay. A key milestone will also be completing the necessary training and certification for train crews," he concludes.

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limited capacity to move goods, particularly in areas where demand is increasing as the infrastructure cannot keep pace.

Many railway lines are either outdated, under-maintained or not designed to accommodate the heavy freight volumes required. As a result, fewer trains are able to run, turnaround times are slower and critical economic opportunities are missed by both the public and private sectors.

Consequently, TRIM is working to create unconstrained capacity across the rail network, with a goal to move at least 250-million tonnes of freight a year by rail over the coming years.

Several key projects have already been launched to expand capacity. These include the operation of longer and heavier trains, such as the new 160-wagon train between Phalaborwa and Komatipoort, while the Waterberg coal line is being expanded, and development of the Mmamabula–Lephalale link with Botswana is progressing.

Additionally, TRIM is upgrading port access infrastructure to improve the flow of cargo between inland areas and ports. It is also constructing new loop extensions and sidings.

21 000

The amount, in kilometres, of railway tracks managed by the Transnet Rail Infrastructure Manager

Moreover, work is under way to double key single-line tracks along high-volume freight corridors, with a prefeasibility study currently under way for the Gauteng province.

TRIM noted that timing of funding is critical. "If funding is delayed, capacity projects are also delayed, and cargo remains stuck on road networks or in storage. The upgrades must be planned and implemented [ahead of] demand to avoid further congestion and lost volumes."

Delayed Maintenance

Owing to ongoing budget constraints, TRIM currently has a reactive approach to maintenance. This approach is contributing directly to the continued decline of the country's rail network.

The entity reported that many rail system components are degrading faster than they can be repaired, which affects performance, introduces safety risks and leads to long-term infrastructural damage.

"Failure rates increase exponentially at the end of life of the asset, or for a poorly maintained asset," TRIM explained. Therefore, the longer repairs are delayed, the more dangerous and costly the consequences.

TRIM thus stressed the importance of conducting maintenance before peak periods, as this would ensure that the network is fully functional when cargo must be moved. However, it acknowledged that this would require adequate planning and funding availability.

To prevent project delays, TRIM stated that maintenance funding must be secured at least 12 months before work is carried out, while contracts and material procurement must be finalised at least six months before the scheduled work, to avoid supply chain disruptions.

Immediate investment is also required in technology and systems such as condition monitoring tools and data collection equipment. These tools will help identify infrastructure issues before they result in significant failures.

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Investors keen for B Network Prospectus

DEVINA HARIPERSAD | CREAMER MEDIA REPORTER

State-owned rail freight company Transnet's Rail Infrastructure Management entity (TRIM) during its latest Investec Engagement that took place on March 14, says that it plans to release a B Network Prospectus by the third quarter of this year, following consultations with the Department of Transport (DoT) regarding the network's commercial potential.

South Africa's railway network is divided into two primary categories: the A Network and the B Network.

The A Network comprises the country's most critical rail corridors, which connect major economic hubs such as mines, ports and metropolitan centres. The B Network includes smaller, lower-traffic lines, many of which are either underutilised, damaged, closed or traverse rural and remote areas.

TRIM believes that the commercialisation of the B Network – about 9 000 km – has significant potential to contribute to the broader strategy of revenue generation and network revitalisation.

The entity characterises the B Network as comprising rail corridors with value and investment appeal that are uncertain or yet to be fully assessed.

In collaboration with the Public Sector Participation Unit, a joint undertaking between the DoT, Development Bank of Southern Africa and National Treasury, TRIM plans to conduct a comprehensive evaluation of these lines, segmenting the B Network into strategic, non-strategic and redundant corridors, ahead of the finalisation of the investment prospectus.

The prospectus is expected to outline the condition of individual B Network lines, identify corridors suitable for agricultural or mining freight, describe opportunities for private-sector involvement in operations and rehabilitation, and set out potential business cases and areas where government support or partnerships may be available.

Market observers anticipate a positive reception to the prospectus, with several investors reportedly ready to explore the opportunities it will present.

"The need is vast, as are the opportunities for private investors seeking to channel funds into initiatives that will benefit South Africa as a whole," public–private partnership (PPP) specialist Gap Infrastructure Corporation (GIC) CEO **Roelof van den Berg** stated in a press release issued on April 14.

"A clear pathway is being developed for investors wanting to participate in the modernisation of the country's rail network," he noted, adding that investment opportunities were not confined to rail tracks, including those within the B Network.

Van den Berg argued that the real value proposition might be the development of supporting infrastructure.

"This includes high-capacity terminals, upgraded signalling systems, efficient loading infrastructure and corridors designed for future expansion, as well as surrounding housing [and] commercial developments, and industrial zones that could be catalysed by improvements to the country's logistics network," he said. "Deliverability by infrastructure developers will be key," he added.

Although TRIM has not publicly disclosed whether it is in talks with infrastructure investors, it has identified additional areas beyond the B Network that will require modernisation, and for which it hopes to attract private-sector participation.

However, no specific project details have been released yet.

Van den Berg suggested that, before any large-scale infrastructure drive, government must establish a robust investment framework built on insights from previous PPP initiatives.

He noted that, fortunately, South Africa is not starting from zero – similar investment frameworks have been successfully implemented in other countries.

He suggested that reforms such as the Luxembourg Rail Protocol to the Cape Town Convention were already influencing the global financial landscape for rail investment, offering a sound platform for future initiatives.

Van den Berg said that by strengthening legal protections for rolling stock lenders and lessors, these frameworks help mitigate the risks traditionally associated with cross-border financing, thus making rail investment more attractive to private capital.

The introduction of a smarter, sturdier rail ecosystem where the public and private sectors work in tandem is emerging. Such cooperation would enhance risk mitigation, streamline financing, and ensure regulations meet international benchmarks, Van den Berg noted.

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AN

Major projects revealed to boost Ethiopia's rail economy

Ministry of Transport-run national railway operator Ethiopian Railway Corporation (ERC) is making notable progress in overhauling the country's railway transport system. It currently has eight major initiatives in progress, all aimed at boosting efficiency, improving connectivity and supporting economic development.

These include the Inodode Logistics Port development, the Mojo Dry Port development, the Addis Ababa-Djibouti railway line and the Bishoftu Railway Academy — key infrastructure projects designed to modernise Ethiopia's rail network and reduce reliance on international expertise.

"The aim is to develop an efficient and integrated transport network that benefits the nation through collaboration with various government agencies," says ERC finance deputy CEO **Tewodros Asrat**.

Key Projects

The Inodode Logistics Port is a pivotal initiative to enhance rail-based freight movement. Upon completion, it will serve as a key logistics hub, helping move goods efficiently across Ethiopia and to neighbouring nations, easing road congestion and cutting transport costs.

The Mojo Dry Port is being developed as a cargo handling and storage facility for freight transported by rail or road. It will simplify import and export processes by centralising inspections, customs procedures and transfers between different modes of transport.

Among the most important projects is the Addis Ababa-Djibouti railway line, a strategic link between landlocked Ethiopia and Djibouti's ports. It plays a vital role in the country's trade, offering quicker and more affordable freight transport.

Further, in the ERC's efforts to strengthen regional transport links, it has completed a feasibility study for the Ethio-Sudan railway line. This project aims to support cross-border trade and improve transport efficiency between Ethiopia and Sudan, deepening regional integration.

Meanwhile, to overcome the shortage of trained professionals in the railway sector, the ERC is building the Bishoftu Railway Academy.

This local institution will help train Ethiopian professionals domestically, reducing the need for internationally educated professionals.

"Previously, the corporation incurred significant foreign currency costs by sending personnel abroad for training. The ERC is now focusing on developing local training centres to build a skilled workforce within the country," Asrat says.

According to ERC business development division deputy CEO and engineer **Getu Gizaw**, the Bishoftu Railway Academy is central to developing local resources, as it will offer specialised training and facilitate technology exchange with international partners.

He adds that the ERC is actively resolving outstanding issues regarding the Bishoftu Railway Academy's construction. "At the same time, we're expanding railway connections to ports and enhancing the overall network."

Certification and PPPs

The ERC recently received a qualification certificate from the Ethiopian Construction Authority, enabling it to offer consulting and carry out construction work on infrastructure projects such as roads and bridges.

"This certification enables the corporation to take part in a wider range of infrastructure work, including road and structural projects within the scope of the upgraded railway network," explains Gizaw.

This allows the ERC to handle more projects on its own, minimising the need for foreign contractors and helping keep project funding within the local economy.

Moreover, to support its growth strategy, the ERC — like South Africa's Transnet — is rethinking its business approach. It is exploring public-private partnerships (PPPs) and broadening its funding sources to secure investment for major infrastructure developments.

The ERC is also focused on cutting down existing debt, aiming to ensure long-term financial health.

The ERC's wide-ranging efforts — from new logistics hubs and training institutions to expanded rail links and regional projects — are poised to strengthen Ethiopia's transport landscape.

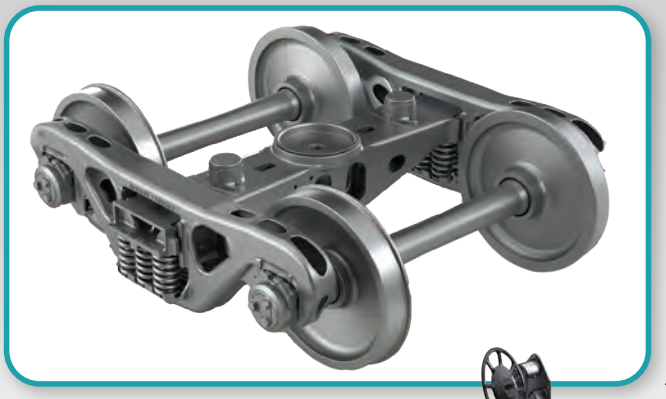
By investing in local skills, improving infrastructure, and managing finances responsibly, the ERC says it is building a more connected and economically dynamic Ethiopia.

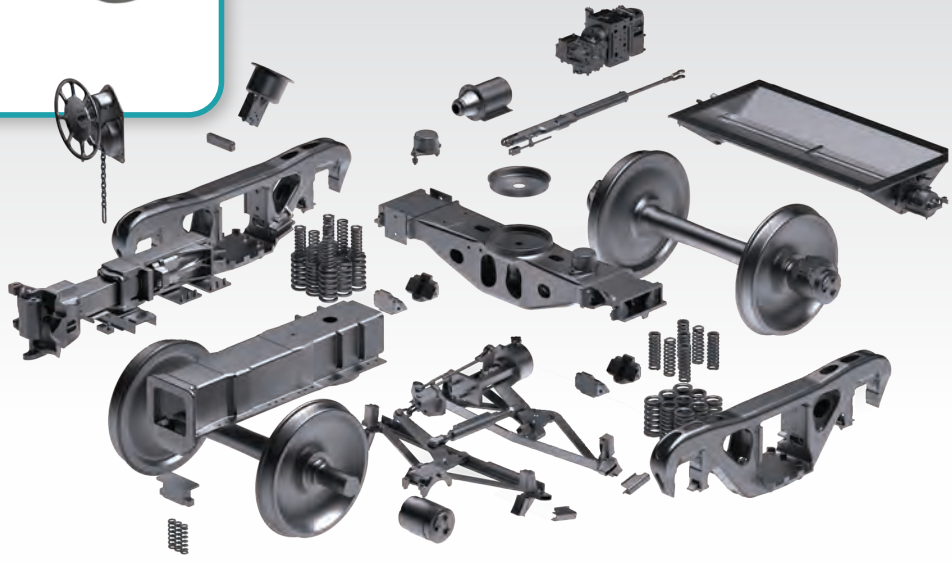
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NOTABLE PROGRESS
The Ethiopian Railway Corporation is overhauling the country's railway transport system to boost efficiency, improve connectivity, and support economic development







The dawn of new technology in Southern African railways

Amsted Reelin an Amsted Rail global partner, is introducing exciting new rail technology to Africa.

Ushering in the latest advancements for rail freight wagons, Amsted Reelin aims to address the challenges and limitations related to traditional bogies – the framed wheelsets under rail carriages. Bogies are the backbone of freight wagons but their weight, complex construction, multiple moving parts, and the need for frequent, specialised maintenance all lead to a high cost of ownership of the traditional units.

Using modern technology for rail freight wagons, Amsted Reelin has developed an innovative motion control bogie to ensure reliability, performance and ease of maintenance. The motion control bogie has achieved Transnet and AAR M-976 unconditional approval.

Features of the Amsted Reelin bogie include:

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- Reduced maintenance intervals and costs
- Reduced total cost of ownership
- Increased load capacity
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- Durable components
- Consistent friction-damping to protect wagons and tracks

Amsted Reelin provides all the original-equipment manufacturer solutions needed for under a railcar, including bogies, bearings, draft gears, wheel sets, end-of-car systems, braking equipment, adaptors, and bogie components.

The company uses digital technology to track, trace and monitor assets. Amsted digital solutions use Internet of Things end-to-end telematics focused on unpowered assets, like wagons. It employs a combination of high-performance, ultralow-power sensors to monitor and report on parameters such as temperature, load status, wagon condition, and asset security. The cloud-based solution transforms raw data into actionable intelligence and predictive maintenance.

Amsted Reelin is committed to delivering quality railway products while continually improving its processes and productivity.

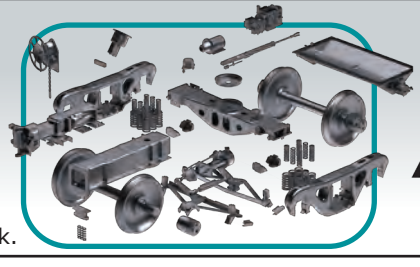
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- Sector-specific training, skills development and capacity building

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Thelo's exclusive strategic partnership with Deutsche Bahn, one of the largest railway conglomerates in the world, provides the company with proven expertise, resources and the capacity to deliver complex projects across the continent.

Our clients include governments, state-owned entities, financiers, major mining houses, agriculture, bulk liquids and container freight owners. To optimise Africa's transport and logistics value chains, Thelo invests in and nurtures relationships with global partners, benefiting its clients. The company ensures infrastructure assets are effectively financed and fully functional by providing integrated solutions that yield solid commercial returns and significant developmental impact.

As a trusted, independent partner, we are responsible for developing, operating and managing large-scale transportation infrastructure projects.

Thelo has the skills, capacity, experience and expertise to develop, implement and support complex railway, port and rolling stock projects.

Our commitment lies in facilitating inter- and intra-African trade to support economic development and the African Continental Free Trade Area.



South African training academy graduates sought after worldwide

TRACY HANCOCK | CREAMER MEDIA CONTRIBUTING EDITOR



LOCALLY INVESTED
FLS's considerable investment in skills development nurtures local talent, providing a strong pipeline of relevant and quality expertise

The expedited assimilation of apprentices into the production department of minerals processing technology supplier FLS's Gauteng-based service centre in Chloorkop, Kempton Park, is a key reason why the company's trainees are in demand globally, FLS Training Academy head Steve Parkinson tells Mining Weekly.

"We comply with the Quality Council for Trades and Occupations' national standards for mechanical fitters and metal machinists. We ensure that our apprentices follow the official curriculum over the three-year qualification, with the first two weeks of training heavily focused on safety. After their basic first year of training, we expose them to the workshop floor, where they are involved in the production, repair and refurbishment of our technologies."

Not only does this approach satisfy the minimum requirements for qualification, but also the advanced and evolving requirements of the mining industry and FLS's technologies.

When graduating from the FLS Training Academy at the company's Chloorkop facility, which services Africa and the Middle East, apprentices are more than qualified, they are artisans with the experience needed to immediately get to work. "We have a unique approach to training. There's no internship time needed. These apprentices are already fully qualified," affirms FLS service centres director for Europe, the Middle East and Africa (EMEA) **Nico Erasmus**.

Parkinson notes that this approach is also the reason behind the FLS Training Academy's 100% first-time pass rate.

"It helps our trainees tremendously when they do their final trade tests, giving them the confidence to go out and conquer anything."

The artisans produced by the FLS Training Academy are also ready for the global market, with FLS service centres in other countries seeing the value of South Africa's apprentice training programme.

Apprentices from the FLS programme who have transitioned to become field service technicians are sought after globally, with the South African arm doing a significant amount of field work for customers based worldwide.

"Consequently, we are in the early stages of opening avenues to transfer qualified apprentices to other FLS sites globally. We are currently exploring opportunities involving service centres in Tucson, Arizona, in the US, and in Peru without apprentice training programmes of their own," shares Parkinson, highlighting that the company started exploring this concept late last year.

Supporting Sustainability

The FLS training programmes are set up to support sustainability goals, as service

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Internationally benchmarked training programmes bridge skills gap

TRENT ROEBECK | CREAMER MEDIA REPORTER

A multi-phase training project was recently implemented at a Southern African mining operation by asset integrity management and industrial solutions company Dickinson Group of Companies (DGC) Africa's education and training services division, DGC Africa Skills.

DGC Africa Skills provided mining personnel with skill sets to efficiently, productively and safely undertake various tasks at a mine to improve safety and site efficiency by enhancing communication and productivity, improving workforce efficiency and reducing the occurrence of dangerous behaviour, says DGC Africa Skills and workforce solutions GM **Hervé Kisula**.

"The scope included upgrading technical skills for artisans across electrical and mechanical disciplines, and delivering safety compliance training to contractors and new recruits, as well as providing leadership and productivity training to mid-level supervisors," he notes. This project also improved the client's standing in terms of government compliance, in addition to empowering communities through skills development and contributing to localisation.

DGC Africa Skills provides turnkey training solutions for mining operations to equip personnel at various levels of the organisation with updated skills to navigate the environment.

Kisula says this starts with DGC Africa Skills conducting a skills gap analysis, which entails identifying training needs based on compliance requirements, roles and operational goals using on-site assessments.

Thereafter, the company will provide the mining operation with a customised training programme that includes theoretical modules and practical training to equip mine personnel – including entry-level workers, experienced artisans and supervisors – with the necessary skills.

DGC Africa Skills will then offer the mining operation on-site or centre-based training, with physical equipment, further assessments and certifications, as well as performance tracking and coaching through post-training support and reporting for ongoing development.

Training Accreditations

DGC Africa Skills' competency-based and accredited technical training programmes range from artisan upskilling, health and safety training, and leadership development, to soft skills, communication development and equipment operator training.

"Entry-level workers gain foundational skills to secure employment and perform tasks safely; experienced artisans are able to

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Mobile solutions improve mining education, training

TRENT ROEBECK | CREAMER MEDIA REPORTER

In providing prefabricated and modular buildings, modular buildings manufacturer Kwikspace has completed various installations at several mining operations in South Africa, where such buildings were required for mine site classrooms, training facilities, induction centres and offices.

One of the most recent of such orders involved the delivery of five modular buildings, which will be used as classrooms for a mine's education programmes, says Kwikspace COO **Roberto Campos**.

"All of the classrooms were delivered within a week from date of the order," he enthuses.

This is indicative of the company's ability to supply durable modular buildings in a short period, consequently enabling mining operations to meet tight deadlines for education and training programmes.



UITKOMST COLLIERY
Kwikspace completed the installation of a mobile building at the Uitkomst Colliery in Utrecht, Newcastle

Mobile classrooms on offer from Kwikspace are constructed at one of the company's controlled-environment facilities, and are then transported to a mining operation, for installation without too much site preparation.

This reduces the costs and workforce required for the on-site construction of buildings, which is likely to benefit the mining operation, adds Campos.

Additionally, the mobile classroom buildings are fully relocatable, making it easy for the company or a mine's on-site personnel to move modular buildings according to a mine's requirements.

The mobile classrooms are unique in that they are "eternally versatile", notes Campos, adding that this depends on the requirements of a mining operation, with the design and flexibility of the mobile unit being customisable long after the modular building has been established and installed.

Kwikspace's modular buildings are manufactured using durable materials that can withstand harsh environments, and are compliant with the health, safety and quality standards of many mining operations, he says.

Built Strong

The ceilings and walls of the company's modular buildings are made from Chromadek steel, which encapsulates the structural insulated panels.

The panels are engineered to a 40-mm-thick layer of polyurethane foam, and are joined using a male and female joint, offering optimal strength and the ability to withstand heavy rains.

The panels, regardless of customisation specifications, are equipped with a simple design, offering enhanced structural strength over the full width of the panel. They also assist in reducing the amount of energy used to control the climate within, owing to its thermal efficiency.

However, the units can be equipped with heating, ventilation and air-conditioning (HVAC) systems, depending on customer requirements and the environment.

"The buildings provide a comfortable learning environment, and when required, we often include HVAC for improved conditions," notes Campos.

Kwikspace also offers a variety of modular units for other purposes, including accommodation facilities, ablutions, change-houses, control rooms and offices.

"We have provided many buildings to various mines for training facilities and other facilities . . . [and] often keep classrooms in stock . . ." he concludes.

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centres enable the reuse, repurposing and refurbishment of equipment, says Erasmus.

"Our programmes support sustainability by ensuring that our apprentices are skilled at preventing the unnecessary replacement of equipment by employing advanced maintenance techniques, such as vibration analysis."

This is not only done at the company's service centre but also in the field, which further helps to extend the life cycle of equipment.

The company aims to maintain 53% female representation within the academy to contribute to the worldwide focus within FLS to promote women in mining, highlights Parkinson.

The apprenticeship intake at Chloorkop, therefore, includes five female and five male candidates, with the company receiving more than 2 000 applications.

FLS apprentices have also transitioned from being artisans into more comprehensive roles within the company.

FLS is well established in developing the previously disadvantaged community in terms of vocational studies and learnership programmes and is placing greater focus on the professional space. For example, its technician programme is helping to categorise the experience levels of senior and junior technicians, which is not only to the benefit of the employee but also informs customers about the level of technician being sent to their sites.

"The academy also offers learnerships, transforming university graduates into professional engineers. A memorandum of understanding was recently signed with the Engineering Council of South Africa (ECSA) to promote professional engineers, and we're in the process of becoming an ECSA-certified academy. This will make FLS the third company in South Africa with this certification, which is a massive achievement and step forward in promoting the engineering field," explains Parkinson.

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upskill, remain compliant and take on more technical responsibilities; and supervisors are developed to manage teams and ensure operational continuity and performance," Kisula explains.

Some of the accredited technical programmes on offer include boiler-making and fabrication, fitting and machining, and rigging and lifting, as well as national certificates in welding application and practice, and electrical engineering.

"Through our blended-learning approach, we support lifelong learning and practical skills transfer, helping individuals grow from entry-level workers to experienced supervisors and managers," he adds.

DGC Africa's education and training programmes also focus on providing accreditation for auto electricians, boilermakers, electricians, earthmoving mechanics, fitters, instrumentation technicians, machining fitters, plumbers, petrol and diesel mechanics, riggers and turners.

Meanwhile, in terms of the future of education and training in mining in general, Kisula says digitalisation, localisation and sustainability will be focus areas.

He highlights that DGC Africa, despite not yet fully adopting AI technologies, continues to adopt other modern technologies, such as simulation-based training tools for heavy equipment, data analytics for progress reports and digital learning platforms for blended-learning programmes.

Further, there will be an increase in the uptake of e-learning and hybrid models; skills development for automation and renewable-energy technologies; modular, micro-credential-based training; and the empowerment of youth and women in mining through inclusivity initiatives, he says.

"Our goal is to bridge the skills gap by equipping mine personnel with internationally benchmarked training, ensuring they are confident and capable in performing their duties," concludes Kisula.

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Colliery Training College celebrates 60 years

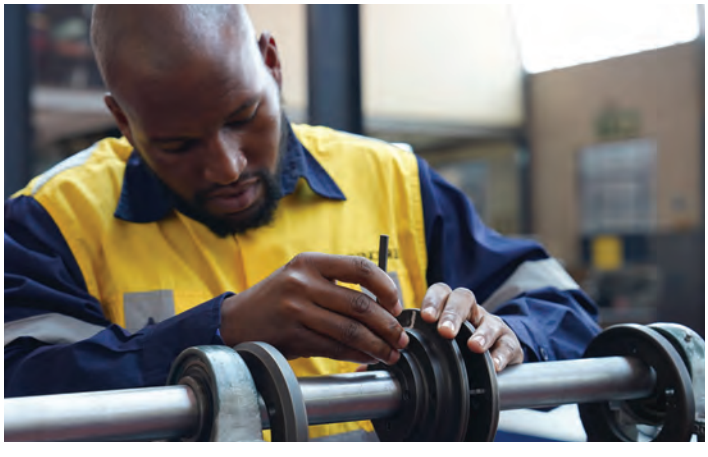
The Colliery Training College (CTC) has been a cornerstone of the South African skills development landscape since its establishment in 1965. For six decades, CTC has been renowned as a premier provider of engineering and mining qualifications based in Emalahleni. Over the past 60 years, CTC has played an indispensable role in equipping generations of individuals with the knowledge, expertise, and safety consciousness necessary to thrive in demanding industries. As the college proudly marks this significant milestone, it is an opportunity to reflect on its rich history, acknowledge its significant contributions, and explore the comprehensive range of training programmes that continue to shape the future of various sectors in the country.

Established in response to the growing need for skilled personnel within the burgeoning coal mining industry, CTC initially focused on providing foundational training in core mining disciplines. Over the years, the college has evolved and adapted to the dynamic needs of the mining and other sectors, expanding its curriculum to encompass a diverse array of specialised programmes that cater to various roles and responsibilities within mining and engineering operations.

Today, CTC offers a comprehensive range of artisan training programmes, including legacy trades (owing to the phasing out of which, learners registered in these qualifications must complete them by June 30, 2027) and occupational qualification trades. Training integrates knowledge, practical application, and workplace experience, encompassing specific skills training and specialised industry-aligned short courses.

The occupational qualifications trades offered by CTC include Transportation Electrician (auto electrician), Diesel Mechanic, Electrician, Instrument Mechanician, Metal Machinist, Welder, Boilermaker, Heavy Equipment Mechanic, Mechanical Fitter, Fitter and Turner, Rigger, and Millwright.

Committed to fostering a highly skilled and innovative workforce, CTC empowers individuals through its high-quality, industry-aligned training programmes. CTC offers a range of registered skills programmes and





specialised customer-aligned short courses which include Artisan Aide programmes, Medium Voltage (Switching), Gas Testing, and Flameproofing – maintenance of flameproof equipment (engineering), Working at Heights, Scaffolding Erector and Inspector training programme, Advanced Hydraulics, Wireman's License, MV Cable Jointing, Automotive Air Conditioning, and Solar Commercial PV design and Compliance with PV, as well as registered mining skills programmes such as Blasting Assistant for Surface Excavations, Competent Person A for surface excavations, Blasting Assistant for underground mining, and Fall of Ground Competent A and B for underground coal mining. These short courses equip trainees with industry-aligned skills, and the registered skills programmes earn credits on the National Qualifications Framework towards a full qualification. These programmes are key to addressing critical skills needs, developing specific competencies, and cultivating a culture of accountability. Further, CTC offers a valuable candidate screening service to its customers.



CTC provides full qualifications in underground mining, surface excavations and mineral processing. Following the completion of basic training modules, students can progress to a range of full qualifications such as a Blasting Certificate, Continuous Miner or Longwall Mining qualification, Opencast Blasting Certificate, or Rock Breaking/Surface Excavation Certificate. CTC's mineral processing courses include both basic coal preparation for plant operators and advanced coal preparation for more senior mineral processing personnel. Notably, the underground mining training, previously situated at Thungela Greenside Colliery, has now relocated to Seriti Khutala Colliery.

Training is conducted at CTC's state-of-the-art premises, which provides affordable student accommodation, a variety of recreational areas and a dining hall. CTC training is specifically designed to meet workplace demands, and its workshops and training rooms are staffed by skilled training officers who are specialists in their respective fields. Through its collaborative approach and close work with industry partners and stakeholders, CTC ensures that its curriculum remains relevant and up to date with the latest advancements in technology. This fosters continuous learning and develops a skilled workforce that prioritises safety, positively impacting the broader community.

CTC's dedication to quality is evident in its numerous accreditations from esteemed bodies such as the Quality Council for Trades and Occupations, Mining Qualifications Authority, the Department of Higher Education and Training for Assessor and Moderator registrations, and the National Artisan Moderation Body. Further, CTC is ISO 9001:2015 and ISO 45001:2018 certified, highlighting its dedication to both quality and occupational health and safety standards. These accreditations underscore CTC's unwavering commitment to delivering exceptional training and assessment services.

CTC remains steadfast in its mission to equip individuals – from those just entering the workforce to seasoned professionals – with the essential engineering and mining skills required for successful careers. As a Level 1 Broad-Based Black Economic Empowerment contributor, CTC is committed to driving industry growth while ensuring the safety of its students and the wider community. With its rich history, strong reputation and enduring commitment to excellence, CTC continues to evolve and is strategically positioned to remain a leader in skills development for many years to come.



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Event to highlight fire prevention measures, detection technology

LUMKILE NKOMFE | CREAMER MEDIA WRITER



FIRST-HAND EXPERIENCE
One of the benefits of Firexpo is that it offers visitors the chance to experience fire safety solutions first-hand, through live demonstrations

This year's Firexpo event will focus on increasing safety for building occupants and company employees through sophisticated fire detection technology and preventative measures, coupled with targeted emergency and disaster measures, highlights event management company Specialised Exhibitions – a division of Montgomery Group.

Specialised Exhibitions portfolio director **Mark Anderson** notes that Firexpo – being held this year from June 3 to 5 at the Gallagher Convention Centre in Midrand – has and will continue to grow in popularity within the fire industry, evidenced by it attracting an increasing number of visitors every year.

One of the benefits of Firexpo is that it offers visitors the chance to experience fire safety solutions first-hand, through live demonstrations, allowing visitors to test various fire safety products to ensure that they find the correct solution to their specific challenges.

This adds to the wealth of experience that exhibitors bring to the table, creating an interactive networking environment where visitors are assured of creating a work or living environment where fire risks are mitigated.

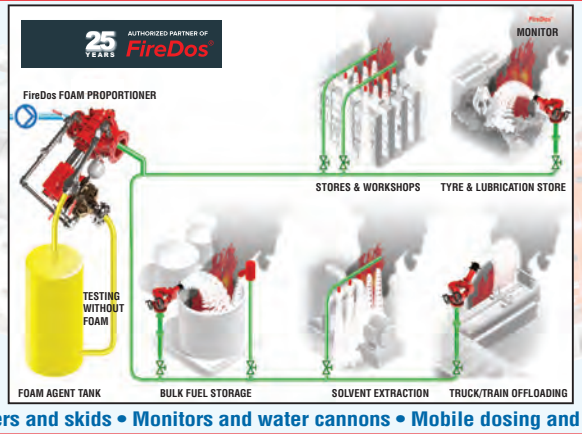
As the organiser, Specialised Exhibitions

• To page 70

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Two Bites of the Apple

Event management company Specialised Exhibitions, a division of the Montgomery Group, is bringing four of its highly successful trade shows — Securex South Africa, A-OSH EXPO, Facilities Management Expo, and Firexpo — to the Cape Town International Convention Centre from October 21 to 23.

These co-located events will provide businesses and professionals in the Western Cape with a platform to explore the latest innovations in security, occupational health and safety, facilities management and fire safety.

Why Cape Town?

According to Specialised Exhibitions, the security market in the Western Cape is "booming", spurred by technological advancements and the increasing demand for enhanced safety solutions. "As crime rates rise alongside economic growth and urbanisation, local businesses are actively seeking cutting-edge technologies like AI-powered systems and advanced surveillance," the event organiser states.

This demand has already seen several Johannesburg-based security firms expanding operations into the region. Recognising this shift, Specialised Exhibitions is bringing its "winning formula" to Cape Town to meet the needs of the growing market.

Specialised Exhibitions portfolio director **Mark Anderson** highlights the "strategic timing" of this move: "The Western Cape government's safety initiatives, such as the Law Enforcement Advancement Plan, have successfully reduced crime rates in certain hotspots. Pair this with the region's increasing [occupational health and safety], facilities management and fire safety sectors, and the time is ripe for a Cape Town-based event. These shows will provide local companies with an unrivalled opportunity to showcase their offerings to a highly engaged audience."

• From page 68

is focused on delivering a stronger, more impactful event by building on what has previously worked and elevating these aspects, and it aims to do so by growing the exhibitor mix to include more recent solutions, thereby ensuring that the event reflects the latest advancements in the sector.

"We're curating a focused seminar programme that speaks directly to industry challenges and solutions, featuring expert-led talks and live product demonstrations and, owing to the growing demand, Firexpo 2025 will expand into Hall 4 at the Gallagher Convention Centre, giving us more space to showcase solutions and accommodate the event's growth," Anderson explains.

The company seeks to deepen partnerships with key industry associations and stakeholders to ensure that the event remains relevant, connected and valuable to the fire safety community.

The fire industry plays a crucial role in South Africa's economy and public safety, serving as a catalyst for industrial growth and risk management, Anderson notes.

The significance of this industry lies in its protection of infrastructure and investment as it helps safeguard billions of rands' worth of infrastructure across commercial, industrial and residential sectors, including manufacturing plants, warehouses and logistics hubs, power stations and renewable-energy sites, shopping centres, hospitals, schools and public buildings.

Anderson notes that without effective fire protection systems, these assets face a heightened risk of loss or damage, which could lead to job losses, insurance payouts, business closures and stalled economic activity.

The fire protection and firefighting industry employs many South Africans including fire engineers, system designers, firefighters, emergency responders, technicians, installers and inspectors. There are also support training institutions and certification bodies that contribute to skills development and professionalism in the broader safety and engineering sectors.



SECTOR EVOLUTION
Increases in product technology are a testament to evolving fire safety standards



MARK ANDERSON
The fire industry plays a crucial role in South Africa's economy and public safety, serving as both protective infrastructure provider and a catalyst for industrial growth and risk management

The industry is also attuned to technological evolution, with the organiser noting an increase in demand for smart fire detection and alarm systems, AI-driven fire risk analytics, environment-friendly suppression agents, firefighting drones and thermal imaging.

"These innovations promote the growth of South Africa's technology sector and attract manufacturers, integrators and research and development investment into the country," Anderson says.

The industry helps bolster the enforcement of the National Building Regulations, the Occupational Health and Safety Act, municipal bylaws and fire brigade services legislation, with Anderson highlighting that, by ensuring compliance, the fire industry supports legal and regulatory frameworks critical to sustainable development and public safety.

Firexpo's co-location with other events such as Securex South Africa, A-OSH EXPO, and the Facilities Management Expo is creating a comprehensive and accessible platform for fire industry professionals and, in 2024, these combined events attracted 10 115 visitors over three days, highlighting the demand for integrated safety, security and facilities management solutions.

"By consolidating multiple industry events, Firexpo reduces the need for separate gatherings, thereby minimising travel and associated carbon emissions. This approach aligns with global trends in sustainable business practices, where exhibitions are recognised for their role in reducing environmental impact while supporting economic activity," Anderson concludes.

COUPON ON PAGE 22 E695579

Community's firefighting capabilities enhanced

In a significant move to enhance emergency response and community safety, gas pipeline company the Republic of Mozambique Pipeline Investments Company (Rompco) has donated a modern fire truck to the Elukwatini Fire Department in the Chief Albert Luthuli municipality, in Mpumalanga.

This initiative is part of Rompco's corporate social investment efforts and underscores the company's commitment to safeguarding lives and livelihoods.

"With the generous donation of R2.8-million, we as Rompco not only provided financial support to the Chief Albert Luthuli municipality, but we have provided surety and safety that people's lives can be saved," comments Rompco branding, communications and corporate social investment manager **Chuma Mxo**.

"The area is affected by veld fires, structural fires and accidents. Owing to the municipality's financial constraints, we decided to heed the call and assist."

The fire truck, equipped with "advanced technology", also includes a five-year service and maintenance package, ensuring sustained operational efficiency. This donation significantly bolsters the capabilities of the Elukwatini Fire Department, enabling quicker and more effective responses to emergencies.

> *"The area is affected by veld fires, structural fires, and accidents. Owing to the municipality's financial constraints, we decided to heed the call and assist"*
>
> — CHUMA MXO

"The challenge for us as a municipality was that we were responding to the needs of residents with inadequate equipment," says Chief Albert Luthuli municipality chief fire officer **Godiraone Phetlu**.

"Since receiving the fire truck, we have been able to respond more effectively and efficiently, assisting affected areas in the community." A recent fire incident highlighted the impact of this donation. A blaze broke out at a local bed-and-breakfast, threatening nearby structures. "We had a guesthouse fire involving rondavels and managed to save two owing to our prompt response," says Phetlu.

By investing in firefighting resources, Rompco is making a direct impact on local businesses and homes, ensuring that valuable assets are protected. This initiative not only mitigates fire-related incidents but also fosters job opportunities and training for community members.

"We are committed to building safer communities, one initiative at a time," comments Mxo, adding that, with Rompco's support, the Chief Albert Luthuli municipality is better equipped to protect its residents and infrastructure, reinforcing a future where safety and security remain paramount.

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Education key to address fire incidences

LUMKILE NKOMFE | CREAMER MEDIA WRITER

The promotion of public education initiatives about fire prevention strategies should be a key requirement for mitigating the occurrence of fire-related incidences in informal settlements and suburban areas, highlights City of Johannesburg Emergency Medical Services (EMS) spokesperson Robert Mulaudzi.

He says the EMS' public education unit plays an important role in helping informal communities in Johannesburg address the proliferation of fires resulting from cooking, heating and lighting activities – during which candles, paraffin lamps, stoves and open fires are used – as well as illegal connections, poorly insulated wires and damaged cables.

There is also a great need to increase access to heating devices, with the relevant regulatory approvals to effect lasting fire safety changes in informal settlements. Improving fire safety in informal settlements requires a multifaceted approach that includes factors such as ignition risks, building materials, evacuation routes and training.

"Our public education unit is very important and through this, we aim to determine the various types of fire safety risks and challenges that our communities are regularly coming across. We aim to design a programme that is specifically intended to address these challenges and encourage members in our communities to use [safer] devices such as rechargeable lights instead of candles," Mulaudzi explains.

It is also important to build dwellings a good distance apart from one another to prevent fires from spreading rapidly, while replacing combustible construction materials, such as wood, paper, plastic and fabrics, would enhance fire and structural safety.

Further, Mulaudzi notes that residents in suburban areas usually use gas heaters and electrical stoves and, owing to this, they should ensure that they have the necessary knowledge and skills to safely manage these appliances; good practices include regularly assessing and maintaining "sound order" of appliance cabling.

As winter approaches, the long-term results of the EMS' door-to-door campaigns throughout the informal and suburban areas of Johannesburg could lead to increased fire safety consciousness, thereby facilitating a reduction in the intensity and severity of fire incidences, with the hope that emergency response units will not be required to intervene.

"The most important factor in advancing this imperative is ensuring that communities are empowered when undertaking efforts to manage fire risks. We should have a large number of proactive fire safety inspectors and public education officials out there to spread this message.

"Following this, we need to ensure that there is a strict adherence by informal communities to fire safety bylaws, thereby creating a culture of responsible behaviour in relation to fire safety," he adds.

Urbanisation Challenge

Urbanisation presents significant fire safety challenges, owing to factors, such as unpoliced wildland-urban interfaces, as municipal capacity is limited. This can lead to an increase in fire incidences, loss of life, injuries and economic losses.

Mulaudzi notes that the expansion of cities increases the risk of wildfires spreading into urban areas. The EMS also has to contend with the reality that there is a lack of adequate resources and the infrastructure necessary to effectively respond to fire incidences.

In the Johannesburg central business district (CBD), fires can cause significant economic losses, business disruption and infrastructure damage.

Mulaudzi adds that so-called hijacked buildings in the CBD should be closed and handed over to the city's development management department, as it might be possible to renovate and repurpose them, and even reinstate control by the legitimate owners. This would increase the likelihood of future residents safely occupying these buildings.

Mulaudzi regards stronger enforcement of fire safety laws and regulations, the integration of fire safety into urban planning and design, and the provision of adequate resources, as alternative strategies for addressing fire safety challenges.

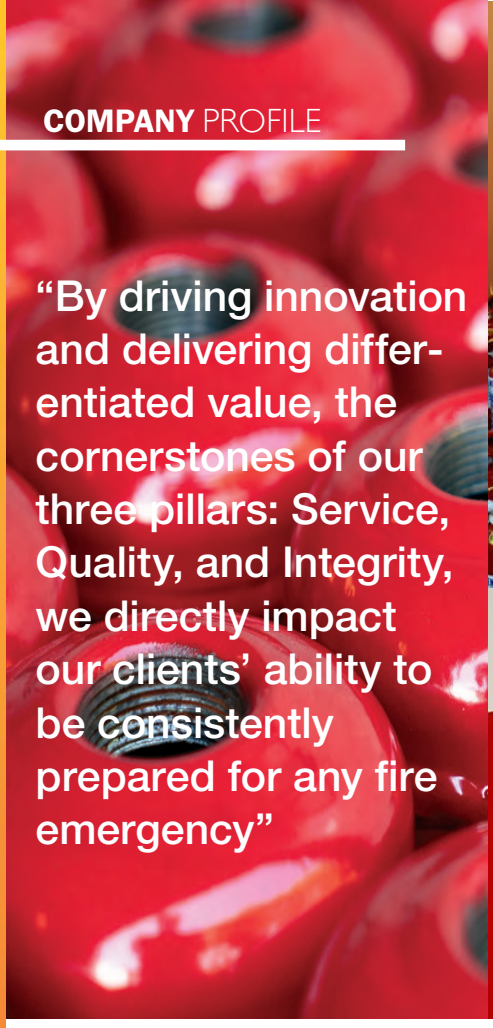
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ROBERT MULAUDZI
As winter approaches, the long-term results of the EMS' door-to-door campaigns throughout the informal and suburban areas of Johannesburg could lead to increased fire safety consciousness

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Francisco Baudrand

Enaex Africa



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Full Name: Francisco Baudrand

Position and Company Name: CEO of Enaex Africa

Main Activity of the Company: Production and supply of explosives used for blasting applications in the mining sector in Southern Africa

Date and Place of Birth: October 1, 1977, Santiago, Chile

Education: I completed my primary and high school education in Chile, before studying to become a civil industrial engineer at Pontificia Universidad Católica de Chile, graduating in 2002. I went on to complete an MBA at the same university in 2006. In 2015, I had the opportunity to further my education at Harvard Business School, in Boston, where I became an alumnus of the Executive Education Senior Management Program

First Job: My first job was at Agunsa, a Chilean company specialising in port operations, logistics and investments in private ports. I later moved to its sister company, a shipping company focused mainly on container transport, where I served as line manager for services connecting Asia with South America

Size of First Pay Packet: My first professional salary was 750 000 Chilean pesos a month at Agunsa, in September 2002. This would be equivalent to about R15 000 at today's exchange rate. But even before that, I was entrepreneurial; I sold cheese in my neighborhood to earn my own money from the age of 16. I also had to take out a loan to afford university

Career Path to Date: After six years in the port and shipping industry, I was offered an opportunity to become senior manager for strategic planning in the freight business at LATAM Airlines, the largest and most prestigious airline in Chile. Four years later, in April 2011, I joined Enaex in Chile as director of strategic planning and business development. At only 33 years of age, I was entrusted with leading Enaex's international expansion. As an expert in mergers and acquisitions, I played a key role in the acquisition of our subsidiaries in Peru, Brazil, France and South Africa. The South African business, a joint venture with Sasol, where Enaex has 51% control, led to the creation of Enaex Africa, where I have served as CEO since July 2020. Our journey has not been easy, but the company is now healthy, growing and profitable, supported by a great team of empowered and committed people

Value of Assets under Your Control: Close to R5-billion

Number of People under Your Leadership: 1 400 employees – this number includes employees in South Africa, Lesotho, Namibia, Botswana and Zambia

Management Style: I believe in empowering and delegating as much as possible, while also being a close and approachable leader to my team

Personal Best Achievement: Successfully leading the journey to establish Enaex Africa as the best and most reliable supplier to the mining industry in Southern Africa. I'm especially proud of the opportunity to positively impact and change the lives of so many people, both our employees and the underprivileged communities we support, with a strong focus on early childhood development

Person Who Has Had the Biggest Influence on Your Life: My mother – she passed away in 2009

Person Who Has Had the Biggest Influence on Your Career: My wife, Marcela

Person You Would Most Like to Meet: I wouldn't single out a specific person, as I enjoy meeting good and well-intentioned people

Businessperson Who Has Impressed You Most: Steve Jobs – his creativity, vision and the way he changed entire industries have really stuck with me

Philosophy of Life: Make things happen, impact and change lives as much as you can; always feel challenged and challenge the rest; but, ultimately, be happy, make your family happy and enjoy life

Biggest Ever Opportunity: Becoming the CEO of Enaex Africa

Biggest Ever Disappointment: Difficult to say; I try never to look back

Hope for the Future: To have better human beings in the world every day, as it is only good people who can shape the world for the better

Favourite Reading: Second World War novels

Favourite TV Programme: None

Favourite Food/Drink: Good South African wine

Favourite Music: 1980s rock and pop music

Favourite Sport: Golf and soccer

Hobbies: Sports, and family, family, family . . .

Car: BMW, but never too luxurious

Pets: Rabbits

Miscellaneous Dislikes: Too much noise

Married: To Marcela

Children: Francisco, 13; Trinidad, 11; Santiago, 9; Elisa, 5

Clubs: I am a member of the Country Club Johannesburg in South Africa and of a golf and polo club in Chile

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