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Welcome to the ‘Bay of Opportunity’

DYNAMIC Nelson Mandela Bay Chamber CEO, Denise van Huyssteen is working with her team and stakeholders to position Nelson Mandela Bay as the Bay of Opportunity.

“Nelson Mandela Bay is probably one of the country's best kept secrets, and there is a lack of awareness around its manufacturing economy. The metro, as a two-port city, which is anchored by manufacturing, is ideally positioned to be a diverse manufacturing hub on the continent,” she says.

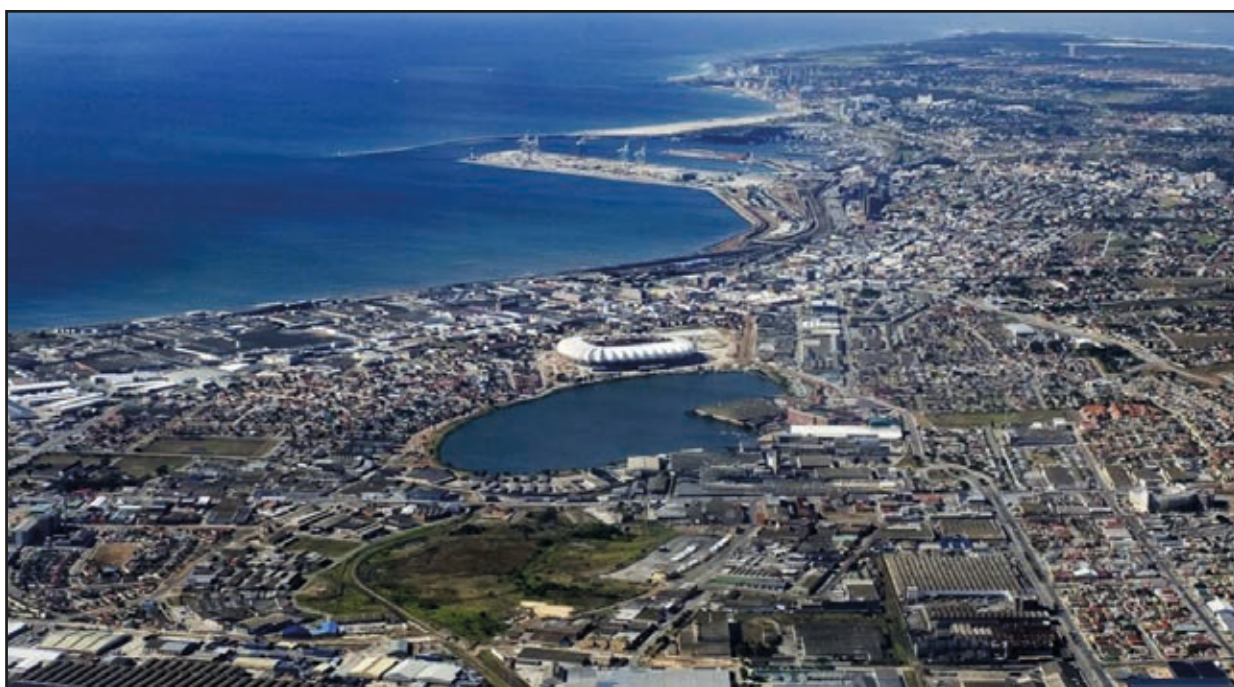
Moving to unlock the metro's potential, the Chamber is hosting a Manufacturing Showcase event in the Bay on 6 and 7 June 2024 which includes business briefings, plant tours, site visits and the opportunity to sit in on a high-level debate on the prospects of the Bay as an investment destination. Panellists include the president of AAAM, Martina Biene, Volkswagen Group Africa MD; Naamsa president, Billy Tom, president and MD of Isuzu Motors South Africa; and businessman, Loyiso Dotwana, president of the Nelson Mandela Bay Business Chamber.

As two of the Bay's newest investors, Stellantis will provide an overview of its R3 billion light commercial vehicle manufacturing project and Hive Hydrogen will give insight into its planned R104 billion green ammonia production plant. With the roots of Aspen Pharmacare firmly entrenched in Nelson Mandela Bay, the company will reflect on its R6 billion expansion programme at its Korsten site.

“The event showcases the capabilities of manufacturers and their commitment to collaborating for the greater good of the local economy. Key outcomes from the event include the start of the positioning of the metro as the Bay of Opportunity and alongside this, the official launch of the Chamber's Local Economy Reinvention Think Tank,” Van Huyssteen says.

Trade & Investment Desk

The Local Economy Reinvention Think Tank initiative was given



As a two-port city, Gqeberha is well-placed to access global markets while over 300 days of sunshine add to its appeal as a place to live. Image: Giaunluigi Guercia-AFP-Getty Images

which plays a crucial role in many of the city's leading industries, facilitating the import and export of various goods to major global markets.

Its economy is anchored by a diverse manufacturing base, with the automotive sector as the biggest driver of the local economy representing 41% of automotive manufacturing employment in the country. Alongside the automotive manufacturers, the metro has an extensive manufacturing supply chain which represents almost half of the country's automotive components manufacturers. “Our manufacturing extends beyond the automotive sector to pharmaceuticals, beverages and agriculture products, reinforcing that this is the ideal environment for these types of economic activities. Many of these manufacturers, which represent multinational organisations, employ highly skilled people and operate in line with global best practices,” she says.

Van Huyssteen adds: “There is no doubt in our minds that the Bay has the potential to strengthen and expand its manufacturing capacity, particularly if the various stakeholders orientate their efforts and actions on ensuring that an enabling environment is in place, especially in terms of logistics, electricity, water and sanitation infrastructure. Alongside this it is vital that we showcase the assets of the Bay, including the fact that it offers over 300 days of sunshine, which in turn offers quality of life benefits for workers.”

“The partnership with BDO enables us to kick-start an optimal positioning of the Bay as an investment destination. We believe we will be able to garner additional support from other stakeholders to strengthen and optimise our linkages. Stronger collaboration focused on common goals will ensure that the assets of the Bay can be unlocked to drive investment and much needed employment,” emphasises Van Huyssteen.

Mokoena says: “We are confident that the output of the Trade Desk will impact positively to grow the economy, elevating its people, its businesses and the communities of Nelson Mandela Bay and South Africa at large.”

“It will optimise the Chamber's Local Economy Reinvention Think Tank initiative which is proactively seeking opportunities to generate manufacturing investment and employment in the Bay.” - Van Huyssteen

Van Huyssteen is encouraged by BDO's willingness to collaborate with the Chamber in its quest to retain and attract investment and jobs in Nelson Mandela Bay and says: “This collaboration is a significant milestone between the two entities in terms of providing value-driven ser-

vice provision for local, national and international businesses. It also reaffirms the importance of finding strong synergies with like-minded partners who are aligned to the vision of unlocking opportunities to bolster South Africa's economic growth.”

The core objectives of the Trade Desk include investment destination marketing in the Bay of Opportunity, collating economic research and data availability, facilitating inward and outbound buyer delegations, hosting international trade exhibitions, and supporting international business-to-business linkages. “It will optimise the Chamber's Local Economy Reinvention Think Tank initiative which is proactively seeking opportunities to generate manufacturing investment and employment in the Bay.”

Having two ports in one city makes Nelson Mandela Bay unique. One of these ports is the most modern deep-water port in the southern hemisphere, the Port of Ngqura. The city's second port, the Port of Port Elizabeth, is another strategic asset

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Highly technical phases commence on Msikaba Bridge

THE band is starting to play louder at the awe-inspiring Msikaba Bridge project, according to Concor's Laurence Savage, project director of this pioneering structure. The Msikaba Bridge forms part of the South African National Roads Agency Limited's (Sanral) N2 Wild Coast project and is being constructed by the CME JV, a partnership between Concor and Mecsa, both 100% black-owned Grade 9CE South African construction companies.

"The last two years have been spent completing the four 21,000 t anchor blocks and progressing the elegant bridge pylons on each side of the gorge," explains Savage. "We are now entering some exciting but technically challenging phases."

The first of these is the post-stressing of the anchor blocks, to ensure the transfer of load exerted by the stay cables is well distributed through the blocks. Embedded 14 metres deep into each block, the post-stressing is profiled as a large 'U' shape to mobilise the dead mass of the anchor block being pulled up by the stay cable at the top.

He highlights that the post-stressing option is a modern and efficient strategy that reduces the need for reinforcement steel – which could

have congested the blocks and made it difficult for the concrete to fill all the voids. The locally procured post tensioning strand cables at each of the 17 anchor points in each block are stressed up to around 500 t by a specialist company. The process is expected to take two to three weeks for each anchor point.

"The next major step will be installing pylon inserts into the pylon's structure as it rises above the 86 metre mark," he says. "There are 17 inserts for each pylon; these are steel rings weighing 8 to 10 t each, which are concreted into place one after the other until the pylon reaches a height of about 122 metres."

The pylon inserts are used as the anchors from which the cables run as back-stays to the anchor blocks, and as fore-stays to the bridge deck. However, Savage notes that not all the inserts have to be in place before the launching of the deck can begin. Careful planning will allow the deck launching – itself a highly technical task – to commence after the first five inserts are installed, which is likely to be in the second half of 2024.

Another demanding aspect of the bridge's latest phase will be the construction of the ladder deck. Being the first steel deck segment



Left: The bridge is being built from the north and south banks of the gorge and comprises two identical 'halves', each spanning 290 m, which will meet mid-point over the gorge.

Right: The flagship Msikaba Bridge near Lusikisiki in the Eastern Cape is now reaching a more technically challenging phase



of the bridge, the ladder deck is to be cast in concrete into the foundation of the pylon and will be the largest continuous pour on site.

"We will cast 700 m3 of concrete in a single

pour, with a very strong 65 MPa mix," he says. "This will also demand a high density of reinforcement steel, weighing 160 t."

Engagement eases water use licence applications in SA

AS South Africa pays closer attention to managing its scarce water resources, it has inevitably become more complex to apply for water use licences; however, there are experts providing support through this process.

"For the best results, the water use licence application (WULA) process really needs close and constant engagement with the Department of Water and Sanitation (DWS), as well as the various technical specialists who conduct studies for the application," says Avril Owens, principal environmental scientist, and associate partner at SRK Consulting. "Specialised consultants can help applicants to streamline this process."

For instance, there is often insufficient information at the early stages of a project to meet application requirements, but the process is generally initiated early because it can be lengthy. To deal with this challenge, environmental experts can be consulted in the concept phase, and can start the WULA process with detailed information gathering and review. This assessment of available data helps determine the best way forward, including detailed schedules with clear permitting milestones, roles and responsibilities and action plans to close identified information gaps.

Owens notes that the DWS Electronic Water



Consultants collaborate closely with clients, DWS officials, and technical specialists to navigate the complexities of water use licence applications

Use Licence Application and Authorisation System (e-WULAAS) has been a significant step forward in streamlining the application process.

"This online system allows for uploading of documentation and assists DWS with tracking and reviewing the application," she says. "It also allows vital communication to be conveyed to and from applicants."

She highlights that structured communication protocols with DWS officials are important

throughout the application process. These protocols may vary between the different case officers and therefore agreed upon channels of communication at the beginning of the process is vital. The officials manage multiple applications, which may impact on their availability to address ad hoc queries regarding specific project requirements. There may also be slightly different technical requirements between the various DWS regional offices, making it crucial for these to be outlined early on.

It can happen that the DWS case officer changes during the application, points out Giulia Barr, senior environmental scientist at SRK Consulting, therefore communication is key to bringing the new case officer up to speed.

"This provides context to assist with the application review – facilitating decision-making within the timeframe," says Barr. "It is also a good idea to select one person per project or site to engage with DWS – so that there is continuity in communication."

A WULA hinges on scientific specialist

assessments and/or engineering designs. A consultant's assistance is invaluable in terms of integrating and sharing this information with the project team. Integration and sharing information take considerable time and effort, often requiring technical integration workshops at key stages of the project where the needs and challenges of specific disciplines can be addressed to meet the DWS WULA requirements.

Owens notes that a common complication in WULAs is when there are project changes, after the application process has commenced, affecting water uses and associated mitigation measures.

"These changes can affect the specialist assessments, incur extra cost and cause schedule delays," she says. "It is advisable that a scope freeze be agreed upon upfront and signed off as the impact of scope changes may be challenging to mitigate."

NC solar project gets greenlight to supply Coega green ammonia plant

THE development of a green ammonia plant at Coega took another major step forward with the announcement of a successful Environmental Impact Assessment (EIA) for the company's R14 billion 1,230 MW Crossroads Green Energy cluster.

The group of nine solar PV projects will be situated in a high solar yield area near De Aar in the Northern Cape. Following the successful EIA, the project will commence with the next stage of the grid connection workstream.

This Giga-scale solar project is the consequence of two years' work by the co-development consortium made up of Hive Hydrogen, Akuo Energy Afrique, Africoast Investments, and Golden Sunshine Trading, whose alliance was formalised earlier this year.

Thulani Gcabashe, chairman of Hive Hydrogen SA, remarked: "The Crossroads Green Energy team has developed this project on time and well within budget – the professionalism and dedication everyone has shown is truly exceptional."

Don McGillivray, of Africoast Investments added: "Africoast, Golden Sunshine Trading, and Akuo Energy are co-developing a 6,000 MW pipeline of solar and wind energy projects, notably for the Coega Green Ammonia projects. The Crossroads Green Energy cluster is being developed for phase 1 of the Coega Green Ammonia Project, while the remaining projects are moving through a phased development to meet the future demand in Coega and potential other offtakers. We are proud to

be working together with Hive Energy to realise these strategic projects."

Hive Energy's R105 billion green ammonia project, designed to produce over 1 million tons a year, is a flagship investment project in South Africa tabled at the Presidential Investment Summit and awarded Strategic Integrated Project Status by the Public Works ministry in November 2022. The project will bring a significant economic boost to South Africa and the Eastern, Northern and Western Cape Provinces.

Africoast Investments is a leading renewable energy developer in South Africa, headquartered in Port Elizabeth, in the Eastern Cape, South Africa. Among its references, Africoast has successfully developed the 27 MW MetroWind van Stadens and 80 MW Kouga Wind Farm under REI4P in Bid Window 1 and the 110 MW Gibson Bay project developed and won in Bid Window 3.



The Crossroads Green Energy Development Team: L to R – Zander van der Walt (Hive Hydrogen) Venance da Silva (Africoast), Constant Prassette (Akuo Energy Afrique), Kennett Sinclair (Golden Sunshine), Trevor Donian (Hive Hydrogen) Maxime Savinelli (Akuo Energy Afrique), John Francis (Africoast) and Donald McGillivray (Africoast) celebrate the project achievements at Vanderkloof Dam, close to the Solar PV sites

Africoast maintains a 100 % success rate for wind projects submitted in the REI4P and currently has a development pipeline of renewable energy projects including solar, wind, hydro and biogas.

Golden Sunshine Trading is a development company based in the Northern and Eastern Cape that identifies high potential wind and solar sites in South Africa through negotiations with landowners and farmers.

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Kariega poultry producer launches R84m on-site WWT plant



The on-site treatment plant recovers at least 70% of the 1,300 kl used each day back to potable quality

THREE years ago, large-scale poultry producer, Sovereign Foods faced the real risk of not being able to operate its Kariega plant due to an inadequate supply of water.

On 7 May, the company officially unveiled its R84 million on-site wastewater treatment plant which recovers at least 70% of the 1,300 kl used each day back to potable quality. This drastically reduces the facility's reliance on municipal water for business continuity.

Sovereign Foods group commercial manager, Blaine Nell, said that he was immensely proud to unveil the completed project which is one of the largest contributors to water sustainability in the Eastern Cape. Nell said Sovereign went through a fairly onerous selection process to decide on a partner in its journey and that it is "non-contestable that we chose the right partner in Talbot".

For water treatment specialists, Talbot Water, the solution was a customised technical and financial package. Talbot's director of project finance and consulting Mike Smith, an economist who does financial modelling and acts as a transaction advisor, explains that Sovereign Foods' Kariega project is a hybrid solution. "The water recovery plant is based on a Build, Own, Operate and Transfer (BOOT) model and the

client buys the water from us based on an agreed R/kl fee."

Talbot's business unit lead for implementation, Jutta Dedekind who was responsible for the project build says this model incentivises optimisation. "As the implementation agency, I hand over a functioning plant to the operations and management (O&M) team which runs it as efficiently as possible. The O&M team can lean back on the engineers who designed and built the plant at any time. There's a 'golden thread' running from design to the end of the plant's operating life."

Smith explains that there is a parallel 'golden thread' of responsibility and, ultimately, incentive to perform. "No matter what performance guarantee mechanisms a client puts in place, there is a point at which whoever built the plant's responsibility is severed and they walk away. However, if it's a finance project, the client is guaranteed the vested interest from the owner of the plant who built it and operates it. To reduce the client's risk in the transaction, we build it, own it, operate it and finally hand it back to the client. The plant's working life could be 20-25 years and we typically transfer ownership after 15 years but can reduce it to eight years, as we've done on this project."

Dedekind says that Talbot has a

local O&M team responsible for the daily operation of the plant. "The engineers dial in to the plant from anywhere and monitor that it is running as anticipated," adds Smith. If the plant performs more efficiently than projected, it impacts Talbot's bottom line. Dedekind says it's a self-regulating mechanism where both asset management and operations align for long- and short-term benefits.

Smith says that private water investment is a few steps behind the investment floodgates that opened for private energy. "The financial institutions still have questions, but the time is coming. In terms of technology, although there have been improvements, the processes are tried and tested and water-scarce countries like Israel and Namibia have been successfully operating large-scale water recovery plants since the 1950s."

Nell thanked the Nelson Mandela Bay Department of Water and Sanitation for its guidance throughout the process. "There were certain areas that both ourselves and Talbot were unsure of and the municipality provided the necessary guidance. We sincerely hope that this project will also have a positive impact on the operations of the department," Nells said. Water use licences are required for the extraction from and

discharge into water sources and only licenced water service providers can legally sell bulk water. There are no legal restrictions on the recovery of wastewater.

A growing option

Smith and Dedekind stress that Talbot's solutions are always customised and even two similar processing plants, for poultry, for example, could be different.

The volume of wastewater, cost of the alternative water supply, client's processes and water quality required as well as the space available on-site are variable factors influencing the viability of investing in a private plant.

The scale of the project needs to make sense. "Smaller projects can't carry the big costs associated with procurement, engineering and construction, so there's a scale at which these become more viable. As a guideline, I'd estimate the minimum to be 1,000 kl of water a day.

"The next big driver is what you're saving on the other side of the transaction - the cost of the existing water supply and its projected increase. In eThekweni, for example, the rate is over R50/kl and in Ekurhuleni it's in the region of R40/kl and promulgated to increase by 16% for the next three years," says Smith.

Dedekind says it also depends on what the client requires. "In this case, Sovereign needed SANS 241 quality potable water to use in food preparation. Other clients might require treatment to a standard that meets their discharge permits for the municipality. In that case, the effluent would require fewer processes."

Dedekind says, "Materials used in the plant must be able to withstand the chemical residue and by-products of the treatment process which can be highly concentrated acids. This will require stainless steel or specialist piping for example. That's where we model the plant to the client. It is a live model with numerous variables."

The Sovereign Foods plant includes four tanks, the largest of which is 23m in diameter, and an abundance of space gave Talbot design flexibility. "Smaller spaces can work but they add complexity and therefore cost," says Dedekind. "Building tanks underground requires earthworks and piping across distances also adds cost. But it can be done, we work with the space we're given."

Stressing the bespoke approach to water recovery, Dedekind says the company is up for a challenge and Smith says that most wastewater is treatable.

Truck heavyweight launches more electric options in SA

IN line with Daimler Truck's global ambition to offer 100% CO2 neutral trucks and buses by 2050, DTSA introduced its first fully battery electric truck range at an event in Lanseria on 21 May. Launched at the event was the Mercedes-Benz eActros 300, comprising a 4x2 and 6x2 rigid, along with a truck tractor variant. Also launched was the eActros 400 6x2 rigid and eCanter range.

This comprehensive range offers zero emission during operation and focusses on light and heavy-duty distribution applications for now until local vehicle weight and length legislation allows the introduction of long-haul application vehicles. The eActros range is immediately available for sale to customers, with the strong backing of the DTSA team to ensure customer readiness, and effective running of these vehicles in their operations.

In addition, DTSA announced its ongoing strategic plans for the FUSO eCanter range, which entails the roll-out of extended collaborative trials with its customers. With a portfolio that comprises 6 units, each unit will be allocated to a customer for a three-month trial period, specifically for in-city distribution. The objective of these extended trials is for customers to establish performance and infrastruc-



ture requirements to successfully run battery electric trucks in their fleet. The FUSO eCanter journey in South Africa commenced in 2020, when the brand became the first OEM to bring a 100% electric truck to South Africa, paving the way for electric truck homologation in the country and establishing a strong foothold for DTSA. The eCanter will be available for sale on operating lease after the completion of customer trials.

"The launch of the eActros and the eCanter in South Africa is a massive feat for us. While we know that to reach our ultimate goal of offering 100% CO2 neutral products by 2050 will require various zero emission technologies, this launch represents the vital first step for us in building a sustainable future for transportation. We look forward to customer feedback to better support them as we tread new grounds," said Maretha Gerber, president and group CEO, Daimler Truck Southern Africa.

"A significant investment from various parties as well as support and collaboration across the industry is required to make battery electric truck operations a viable solution in South Africa, especially when it comes to charging infrastructure. DTSA welcomes initiatives, public or private, that contributes to EV charging for trucks as a catalyst for electric trucks adoption," Gerber added.

The eCanter has six HV battery packs with a battery capacity of 83 kWh and a travel range of up to 100km. The range varies according to running conditions. The charging time for the eCanter on quick charge is maximum 1 hour 30 min on a 50 kW DC charger and 11 hours on regular charging. The eCanter has a single-speed transmission, with a Gross Vehicle Mass of 7.5 tons and a body and payload capacity of 4.2 tons. The electric motor performance generates 135 kW and 390 Nm torque. The eCanter has a wheelbase of 3400mm and overall length of 5952mm.

The eActros 300 has three Lithium-Ion Battery packs with a battery capacity of 336 kWh and offers a travel range of up to 330 kilometers. Regarding how these estimates are calculated, the nominal capacity of a new battery is based on internally defined general conditions.



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Compressed natural gas - diesel dual fuel option adds value to truck range

FUEL consumption is the biggest operational cost in any truck fleet. Addressing this issue with a Compressed Natural Gas - Diesel Dual Fuel (CNG-DDF) option for 20 Isuzu models, Isuzu Trucks now offers strategic fuel solutions for reliable, cost-effective, and consistent mobility.

Automotive use of CNG is a proven technology - up to 14 million Natural Gas Vehicles (NGVs) operate in 80 countries worldwide. Isuzu Motors South Africa (IMSAf) has been testing a fleet of CNG-DDF converted trucks for five years with proven reliability.

CNG is not to be confused with 'Liquified Petroleum Gas (LPG) used for flame-grilled steaks! Unlike LPG, CNG is lighter than air. In case of leakage, CNG disperses quickly in the atmosphere with low risk, while LPG spreads on the ground and poses a high risk of ignition. CNG has less carbon thus produces lower volumes of carbon monoxide and carbon dioxide during combustion. Consequently, CNG is a better and safer option than LPG.

Environmentally acceptable

Supporting the challenge to be green, the use of CNG has the following advantages:

- Reduction in Carbon footprint - cleaner fuel - NGVs emit 20-25% less greenhouse gases and virtually no toxic pollutants.
- Reduction in particulates.
- Reduction in Engine noise thanks to natural gas' smoother combustion.
- Reduction in fuel consumption.
- Reduction in fuel theft and adulteration.
- Less engine carbon deposits leads to a longer engine life.
- Improved engine oil quality due to reduction of carbon emissions.

Isuzu's CNG-DDF is easy to operate

The diesel cycle engine remains in standard execution with 100% fallback to diesel at any time. By simply pressing a button, operation



switches between dual fuel mode (diesel/gas a mixture) and 100% diesel mode. Operation automatically reverts to 100% diesel mode when the natural gas cylinder is empty or when a fault is detected with the CNG system. There is a quick gas filling time compared to charging times for electric trucks. But driver training is still necessary.

Trip times & performance

Engine performance and efficiency

is maintained in dual fuel mode - engine torque and power remain practically the same. Trip times are unaffected. The engine works with diesel and CNG simultaneously - a special engine control unit determines the optimal gas/diesel fuel mixture. With similar torque and power, trip times are unchanged.

Safety considerations

CNG is lighter than air and will disperse harmlessly into the atmosphere - an odorant is added for safety and easy detection. The gas has a narrow range of flammability and ignites at concentrations of between 5% and 15% (petrol = 1-8%). It has a statistically proven safety record which is superior to conventional fuels and is non-toxic.

With the coastal price of diesel fuel at R21,91/litre - a diesel tank of 400 litres cost nearly R8800. While Brent Crude hovers around US\$84 a barrel, the Middle East and European

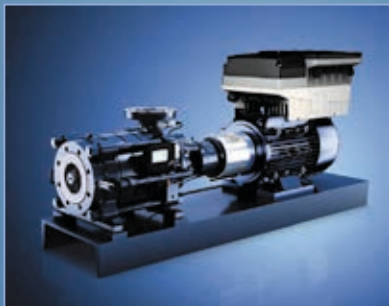
wars present weekly crises and the oil price is volatile. All of this means that fuel, and CNG in particular, should be a strategic - and not just a price - consideration.

The challenge for CNG is the distribution network. Municipalities are an ideal application from an environmental, fuel consumption, anti-theft, and centralised refilling viewpoint. CNG is currently only available in the Gauteng region. The CNG gas cylinders mounted to a Dual Fuel truck add to the tare mass and reduces payload - GVM and GCM remain unchanged.

CNG gas cylinders need chassis space making the conversion to CNG-DDF more suited to long wheelbase models.

The fact that it can be fitted as an option to 20 Isuzu long wheelbase models is a huge advantage for fleet replacement planning. The TruckScience Axle Weight Calculator, available from TruckScience.com, is a valuable tool for understanding the implications of the added weight of the CNG equipment, and for calculating payload capacity.

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Ensuring food security in SA through enhanced cybersecurity for farmers

TECHNOLOGY has improved productivity, efficiency, and communication in every industry across the globe, and agriculture is no exception. Once considered a traditionally low-tech industry, the increased use of email, online monitoring tools, remote controls, and payment systems - together with automated smart farming equipment such as internet-connected tractors - means the digital threat level has increased for farmers, says Carey van Vlaanderen, CEO of ESET Southern Africa.

"As is the case in many industries across the globe, a growing reliance on online, connected technologies means businesses are more vulnerable to cyberattacks. The use of smart devices, including sensors and analytics, IoT devices, robotics, drones, and precision farming, have all transformed the agricultural landscape for the better. These tools also gather extensive quantities of sensitive information that could be lucrative to criminals seeking financial gain," says van Vlaanderen.

In a report released in 2023, South Africa ranked number five globally in a list of countries worst affected by cybercrime. Disruptions in Transnet's IT applications following a cyberattack brought agricultural imports and exports to a standstill in July last year. "In a world increasingly reliant on digital technology, the agricultural sector's vulnerability to cyberattacks not only threatens individual agricultural businesses but poses a risk to national food security, making robust cybersecurity measures of critical importance."

Van Vlaanderen says that the threat is certainly not unique to South Africa, as a report from the University of Cambridge found that smart farming technology such as automatic crop sprayers and robotic harvesters could be hacked and the probability with which this could happen is increasing.

Cybercriminals recognise the global reliance on food and agriculture as an opportunity to target the industry with cyberattacks to achieve either financial

gain through ransomware or for social and economic disruption. Ransomware attacks can be particularly malicious, for example, by erasing backups or threatening to publish confidential information online as a strategy to pressure an organisation into paying the ransom with little risk of being caught and apprehended. "Today, almost every farmer and agricultural enterprise will use some form of technology to do business. For smaller businesses simple security solutions such as the automatic updating of software, antivirus software, and multi-factor authentication are critical. However, larger more intensive farming operations using automated farming systems may require more complex security measures."

Agriculture in general has historically been shown to have a low level of cyber security in place since attacks are not perceived as being as prevalent as in the financial sector. "There is a prevailing myth among some sectors of the South African farming community that their businesses simply are not an attractive target for cybercriminals."

But given the vast amounts of data inherent in many agricultural activities, as well as the substantial financial transactions involved, it is preferable to take a proactive approach to digital security in the face of sophisticated cyber threats," says van Vlaanderen.

While addressing cybersecurity challenges in agriculture can be complex, she adds that there are steps agriculture firms can take to reduce their exposure, limit the damage of an existing attack, and position their employees as the first line of defence. "A necessary first step in strengthening defences is to identify where critical infrastructure is vulnerable to attack. This will be different for each business. Some operations may require more investment in cloud security or vulnerability discovery while businesses may need to extend their cybersecurity efforts to include safeguarding themselves from cyberthreats in the form of phishing emails from the companies they partner with and procure from."

CONSTRUCTION, CIVIL & STRUCTURAL ENGINEERING

Cementing change: The impact of cheap imports on SA's construction sector

CONFIDENCE in South Africa's construction industry has taken a significant hit, reflecting broader concerns about the economy and investment trends. According to the FNB/BER Building Confidence Index, which reveals the percentage of respondents that are satisfied with prevailing business conditions in six sectors covering the entire building construction pipeline, confidence plummeted to 27 in the first quarter of 2024, down from 43 in the previous quarter. This sharp decline, reaching its lowest level since mid-2020, signifies a stark dissatisfaction with current conditions among industry stakeholders.

Added to this, Stats SA reports that the real value of investment in buildings contracted by an annual rate of close to 6% in Q4 2023 – possibly due to a slowdown in the installation of solar panels and other energy investments being made by households and businesses.

Amidst these challenges, the availability of cheap cement imports has emerged as a potential catalyst for revitalising the construction sector. These imports alleviate cost pressures, stimulate infrastructure projects, and promote accessibility and affordability. Projects that were previously stalled due to financial constraints or deemed financially unfeasible can now move forward, contributing to job creation, national development, and economic stimulation.

Yet, it's essential to recognise the nuanced impacts of substituting local cement production with imports. While these imports offer immediate financial benefits, they also pose significant

risks, including potential job losses and economic value erosion. A report commissioned by local cement manufacturer PPC and conducted by the Centre for African Management and Markets (CAMM) highlights these risks, noting that over 2,200 jobs are potentially at risk, primarily in marginalised communities where the cement industry serves as a vital source of employment. Furthermore, there is a potential loss of R2.6 billion per year in economic value, and PPC's significant contribution to GDP of around R8.8 billion across its value chain is at risk.

Quality concerns also loom large in the debate. While cheaper alternatives may offer immediate financial benefits, they may also come with compromises in quality control. Structural engineers and architects play a crucial role in ensuring the integrity and safety of construction projects, with meticulous planning and inspection required to mitigate risks associated with potentially lower-grade materials. Despite assurances that lower-quality cement can yield durable structures, the importance of upholding quality standards remains paramount to safeguarding public safety and long-term investments.

Most recently, the construction industry is showing signs of resilience and adaptability in the face of government having pledged more towards essential infrastructure projects. In his keynote address at the 2024 Sustainable Infrastructure Development Symposium, President Cyril Ramaphosa underscored a pivotal commitment to bolstering South Africa's



construction sector. With over R230 billion worth of projects currently under construction and an additional R170 billion in procurement, the nation's infrastructure agenda appears promising.

Moreover, the government's 2023 allocation of R903 billion to infrastructure until 2026 signals a clear intention to drive economic growth and address critical needs, especially in water and sanitation, and transportation.

Water and sanitation projects, facilitated by simplified procurement processes and legislative changes, offer hope for infrastructure development and job creation. In the 2023 Budget Review, government prioritised 11 strategic projects with an estimated value of R115 billion. These projects span the entire country and are expected to create about 20,000 jobs during construction and 14,000 jobs during operation.

Projects are at various stages of funding and are expected to be completed between 2026 and 2030. In the meantime, municipalities are contracting smaller works out that will see improvements being made in the number of leakages in local water supply facilities.

Similarly, ongoing maintenance and refurbishment of roads, coupled with the emergence of smaller-scale retail and residential projects, reflect a semblance of momentum in the sector. While not without their hurdles, these initiatives underscore the industry's potential to drive economic recovery and social progress.

As an insurer that's active in the engineering, construction and building sector, King Price is keeping a close eye on developments pertaining to confidence in the sector, factors that affect projects, like the availability and price of raw materials, and the insurance needs of the contractors that are busy with projects. For our part, we've recalibrated our offering to meet the immediate risk mitigation needs of smaller contractors and project owners, and have implemented a 'back to basics' approach that empowers businesses in the sector to tailor insurance policies that address their unique risk profiles.

By streamlining our engineering products and providing comprehensive coverage options for risks at all stages of construction projects, King Price aims to bolster confidence and resilience across the construction ecosystem.

SAISC calls for closer collaboration

DESPITE last year's announcement that AccelorMittal South Africa (AMSA) would close its long products facilities – and amidst warnings of projected product shortages, quality issues and supply chain disruptions – it is 'business as usual'. This is according to steel value chain attendees and SA Institute of Steel Construction (SAISC) members at a recent industry breakfast and steel supply panel discussion hosted by the SAISC.

Nonetheless, during a robust debate attended by over 90 steel supply chain role players – including industry heavyweights – and chaired by SAISC CEO Amanuel Gebremeskel, it emerged that while there are no shortages at present, the sector remains on the brink of seismic change.

AMSA representatives present reassured the audience that their Newcastle long products facility would remain operational until June – and that the company was still accepting orders until year-end. It was also stated that negotiations around potentially keeping the long products facilities in production were progressing well.

Seismic changes

However, Gebremeskel and Adam Oldfield, director at leading structural steel company Cousins Steel International (CSI), SAISC Board member and leader of its technical committee, are both concerned about the future of the entire steel value chain – of which the SAISC is a longstanding champion and custodian.

Gebremeskel and Oldfield agree that the potential long product facilities closure has unearthed deeper steel sector concerns, including disconnects across the entire supply chain: "With these in mind, the SAISC seeks to play a proactive role in encouraging strong linkages and relationships between engineers, merchants and fabricators – and by addressing the twin issues of steel quality and availability through the creation of an overarching quality programme, which will include – amongst other initiatives – a new SAISC Red Book," says Gebremeskel.

"Having said this, one of our greatest challenges in the steel sector is that there are so many conflicting interests and agendas throughout the industry. Therefore, there needs to be greater trust across the entire steel value chain, with role players collaborating more closely to innovate and adapt in order to accommodate and drive change," Gebremeskel said.

Quality - the 'golden thread' of industry unity

"Irrespective of the time frame, the closure of AMSA's long products division would have a strong ripple effect across the sector – with the largest impacts being cost escalations and the potential loss of long-term pricing – not to mention project delays resulting from logistics challenges, such as the port delays which are already negatively impacting steel imports," Oldfield points out.

"Other pertinent issues that emerged from the panel discussion included the potential loss of steel product profiles unique to South Africa, the impact which a lack of local content could have on downstream customers (such as the automotive sector) and the possibility of finished products being imported – all of which are indications that the local steel sector is confronting many sobering issues, which could result in massive income losses for local fabricators and galvanizers," Oldfield adds.

One of the greatest concerns voiced during the panel discussion centres on the critical – and at times thorny – issue of quality, with many SAISC members and industry heavyweights questioning the uniformity of quality standards and the traceability of product in the event of failures.

The panel discussion revealed that many are very disgruntled about low quality steel and deeply concerned about related quality issues, should local production scale down. However, all agreed that independent testing of imported product would also add unnecessary costs.

Gebremeskel believes that quality concerns will be the one area where consensus can be reached – and that this will be the common 'golden thread' which unites a divided industry.

Engineers as a link

Oldfield concurs, emphasising however that this starts with the engineering sector working closely with the SAISC and its well-known technical 'bible', the Red Book:

"This is a longstanding, trusted technical resource and an invaluable guide for engineers – but compiling the next edition thereof will not be easy. This is because the greatest challenge will be figuring out what the imminent steel sector disruption will do – for example, what will happen when steel merchants stop stocking certain products, narrowing and limiting available profile ranges."

"We are facing a tough transition in the steel sector, driven by all the factors raised.

Typically, at the SAISC, we focus on merchants and fabricators – the downstream sector. I think engineers need to be more involved, forming a link between the upstream and downstream sectors so that collectively, we can adapt to the new demands and realities of the industry," Oldfield adds.

This could entail engineers designing steel structures differently – or closing the gap created by unavailable products by using those which are available.

Oldfield uses the example of how a potentially long delay in ordering columns saw his company, Cousins Steel International, manufacture these from steel plate. Although more costly, this kept the project on track.

To enable others to follow suit, or to avoid another problem – designers specifying product in accordance with software design packages rather than availability – Oldfield suggests that industry professionals require an extra layer of steel supply market intelligence:

"A key aim of the SAISC technical committee is to create a database which allows them to understand – and design around – the particular products which fabricators can access. At the moment, no-one is working like that," he explains, adding that the extensive technical training which the SAISC conducts annually will also be crucial going forward to assist the sector in agile adaption to market changes.

A call to action

Gebremeskel and Oldfield are therefore calling on all echelons of the steel industry to proactively engage with the SAISC, and are also voicing their appreciation for industry leaders who are already bridging the gap between the downstream sector and the primary steel producer (AMSA):

"This approach will ultimately force a more united industry approach with which to negotiate with government," Gebremeskel advises.

"Meanwhile, the SAISC is committed to doing our part to ensure that the closure of AMSA's long products facilities will not have the same negative impact on the downstream steel sector as similar upstream closures had in Australia.

Instead, our local steel industry needs to emulate Canada where – despite a lack of upstream primary steel producers or mills – engineers design innovatively in steel, and work closely with fabricators to bring these projects to fruition, contributing positively to the sustainability of the steel sector in that country but also to its greater economy," he concludes.

Rational design for fire safety is not just a tick-box exercise

AS building regulations evolve and safety standards are updated, the importance of consulting an expert for a proper rational design in fire protection is increasingly vital. ASP Fire CEO Michael van Niekerk highlights the fifth edition of SANS 10400 Part T, released in February this year, stressing the need for sound engineering principles in fire safety measures.

The standard addresses fire protection requirements and provides deemed-to-satisfy guidelines for compliance with National Building Regulations. This comprehensive document covers various aspects of fire safety, including safety distances, occupancies, fire performance, structural components, escape routes, and more.

Van Niekerk highlights that rational design goes beyond mere compliance with regulations. It involves a thorough understanding of fire risks and behaviour, allowing for the development of customised fire protection strategies. This approach ensures flexibility to meet safety requirements by considering alternative solutions, while affording the same level of protection.

"Rational design is a performance-based approach that requires the expertise of registered engineers," explains Van Niekerk. "From shopping centres to industrial structures like fuel depots, a proper rational design cannot be achieved by simply following code requirements. It starts with a comprehensive risk assessment."

Van Niekerk further highlights the necessity to conduct new fire safety assessments, especially during refurbishments or extensions of existing structures, or when solar panels are installed at an existing shopping centre, for example. "Fortunately, many companies recognise their lack of expertise in fire safety and opt to consult a professional like ASP Fire to ensure compliance with regulations."

Involving experts from the planning stage ensures that the design and installation of fire safety systems align with regulations and industry best practices. "A rational design cannot just be a tick box exercise in terms of the regulations. It requires specific expertise to be carried out effectively and properly," says Van Niekerk.

Anchors provide security in bolted construction elements

In a continuous drive for product improvement, specialist designers, manufacturers and suppliers of structural and precast concrete construction elements, Peikko South Africa, has introduced the Hulco range of anchor bolts – making them a popular choice for securely anchoring concrete or steel structures or machinery into concrete base structures such as foundations, slabs, base columns, columns, or walls.

Hulco anchor bolts with straightforward assembly on-site and relatively short anchorage length are particularly suited for shallow structures like slabs and beams, providing a cost-efficient solution with remarkable load-bearing capacities for heavy-duty bolted connections.

These high performance construction elements are embedded in concrete and attached using nuts and washers to the structures or base plates. The addition of non-shrinking grout enhances the bond between the bolted connected structure and the base structure, acting as reinforced concrete, providing high tested load-bearing capacities for heavy-duty connections in demanding anchoring applications.

The Hulco product range – available in a choice of standard sizes 30, 36, 39, 45, and 52 mm – is compatible with Peikko's Bolda Column Shoes and Sumo Wall Shoes, enabling a wide range of precast connections. CE



marked and ETA certified the Hulco anchor bolts are designed to resist various forces including axial, shear, tensile and compressive forces, bending moments, and fire.

The product is available in a choice of different coatings including uncoated, ECO, or Hot-Dip galvanized options, providing flexibility to suit different project requirements and environments.

Specially designed for industrial construction projects, the unit's simple design speeds up on-site erection and compact packaging ensures optimal use of truck space during transportation. The bolt's advanced material composition combines light weight with high strength making them easy to transport and handle.

Peikko includes reusable installation templates and provides free of charge the new Peikko Designer Bolted Connection soft-

ware for design assistance. This new Peikko Designer is a cloud-based design tool. No installations or downloads are required ensuring that users benefit from automatic updates. The simple and intuitive user interface ensures a good user experience throughout the design process.

The new software features among other improvements, reporting and calculation updates and gives the user more freedom as it enables the reliable and standardized design of architectural shapes that deviate from the mainstream. The new software also allows for inspecting load capacities more visually thanks to 3D capacity graphs. In addition, the tool offers more options for visualizing results while also leaving room for their interpretation. Torsion calculation is one of the new standard features.

The renewed design tool was released together with Hulco, and updates and extensions for the software are expected throughout 2024. The current version has all the basic features needed to successfully design bolted column connections while it is available in EN Eurocode, future updates to the tool will further add support for supplementary rebars, fire stage calculations, and national annexes. In the future, all Peikko's design tools will be cloud-based and easily accessible with a single login and credentials.



Dennis Vietze (left) and Stefan le Roux

Management change at top machine and equipment supplier

AFTER more than seven years, Dennis Vietze, the managing director of Wacker Neuson South and sub-Saharan Africa, is set to bid farewell to the South African shores to take on the helm of Wacker Neuson Australia & New Zealand effective 1 October 2024.

Since commencing his African odyssey on 1 June 2017, Vietze has driven the impressive transformation of Wacker Neuson South and sub-Saharan Africa. Under his leadership, coupled with the dedication of his team, steadfast dealer partners, and unwavering customer loyalty, the company has achieved great success. Notably, turnover doubled from 2020 to 2023, reflecting a period of sustained growth.

The baton of leadership will be passed to Stefan le Roux, the current sales manager of Wacker Neuson South and sub-Saharan Africa. Le Roux, who has been instrumental in achieving remarkable sales successes in the region, is poised to lead Wacker Neuson South and sub-Saharan Africa to new heights.

Speaking on the transition, Alexander Greschner, chief sales officer of the Wacker Neuson Group, stated, "We are happy to appoint Vietze, a seasoned colleague with extensive intercultural experience, to lead Wacker Neuson Australia & New Zealand. We are confident in Le Roux's ability to steer Wacker Neuson South and sub-Saharan Africa towards continued success, given his deep-rooted expertise in the agricultural and construction sectors."

Central to Vietze's tenure were strategic initiatives that have reshaped the landscape of the construction and agricultural sectors. A robust dealer expansion strategy has significantly widened the company's African footprint, bringing innovative solutions closer to customers. Moreover, the introduction of the new Spanish brand, ENAR, under the Wacker Neuson umbrella, and pioneering digital innovations, such as smart glasses, have positioned Wacker Neuson as a trailblazer in the industry. Recognizing the burgeoning potential of the agricultural sector, Vietze spearheaded efforts to harness its strength, resulting in a balanced turnover split of 50% construction and 50% agriculture. This strategic pivot underscores Vietze's astute understanding of market dynamics and his commitment to driving sustainable growth.

Until the official changeover, Vietze remains with Wacker Neuson South and sub-Saharan Africa, transitioning leadership to Le Roux. Together, they will ensure that business continues as usual and that the company continues to excel, even in changing times.

Japanese giant making inroads into local TLB market

ONE of the best-known names in tractors worldwide, Kubota, is making its presence felt in the construction industry with its new EK110 Xtreme extendable reach TLB.

The Japanese brand enjoys unprecedented support in farming circles in South Africa where its tractors dominate several segments of the market. Now, its Kubota EK110 Xtreme is serving the construction industry with Japanese durability and reliability at considerably lower initial and aftersales costs than comparable reach TLBs from Europe and the USA.

The company says that in a major shakeup for the local equipment market, the Kubota machines are up to 30% more affordable than comparable competitors and similar kinds of savings can be had across the entire range of construction machines. Added to these the Kubota machines are extremely fuel efficient,

the engines are easy to maintain and are supported by one of the largest dealer networks in the country.

Distributor, Smith Power Equipment, also has all-new financial packages that can be carefully compiled for contractors and operators of the equipment. These will be unique and will set the trend for future equipment from the supplier. Rather than just chasing "prime-less..." deals, it is exploring new ways for customers to purchase its construction equipment alongside one of the biggest banks in the country.

The Kubota EK110 Xtreme is a versatile



TLB for use in general construction, trenching and lifting applications among others.

It is supplied with a unique six-in-one loader bucket capable of being used as a blade, lifting, scraping, leveling, loading and even opened up as a grab. It has a 105hp Perkins engine that provides more than enough power to lift extra heavy loads and to power the backhoe which also has the additional benefit of being extendable up to an additional 2.4m for extra deep excavations and longer reach. In addition, the boom has a standard third function for the operation of accessories such as rock hammers.

Cement engineered to enhance road durability

AFRISAM Roadstab Cement is a specialised, high quality composite cement engineered specifically for road stabilisation tasks. Available from leading construction materials supplier, AfriSam, this cement is designed to optimise the properties of soils used in road construction, notably by reducing their plasticity and enhancing their strength and stability.

The formulation of AfriSam Roadstab Cement aims to address the vital requirements of road construction projects by ensuring the durability and stability of road bases. The unique composition contributes to its efficacy, particularly in working with challenging soil types like clay. This addition not only improves the workability of the cement in various soil

conditions but also facilitates easier handling and application during the construction process.

Stabilisation using cement also improves the properties of granular materials. When cementitious material is mixed with granular material in predetermined portions and is adequately mixed, compacted and cured, a bound material with significant strength is the result.

An important advantage of AfriSam Roadstab Cement is its extended open working times as it provides ample time for the proper placement and compaction of materials. This type of flexibility in



the construction timeline is crucial for achieving optimal results in soil stabilisation, ensuring that the stabilised layers meet the required standards for strength and durability.

Tailored to meet the demanding needs of road stabilisation, this product offers superior performance across a wide spectrum of road material types. Its consistent quality and ability to reduce soil plasticity make it an essential component for constructing durable and stable roads.

By enhancing the strength and stability of road bases, AfriSam Roadstab Cement plays a critical role in the longevity and reliability of road infrastructure.

Flexible wheeled plant concept makes a comeback

WITH the newly introduced Weir Modular Wheeled Plant (WMWP) concept from Weir Minerals Africa, crushing contractors in Africa can now move and transport their crushing and screening plants from one site to another with great ease, boosting productivity and reducing costs.

According to Tiisetso Masekwameng, general manager – crushing and screening products at Weir Minerals Africa, the WMWP range has always formed part of the Trio crushing and screening offering and makes use of Weir Minerals' Trio crushers, screens and material handling solutions. However, the solution has been completely redesigned to suit new market dynamics.

These plants, she adds, have been deployed across the world in sand and aggregates applications by customers who require the flexibility of a mobile plant without the need for additional maintenance obligations of components such as diesel engines and tracks.

"The concept fits the bill for the construction market, especially crushing contractors seek-

ing to easily relocate their plants to infrastructure hotspots," she says. "Equally, the WMWP is ideally suited for the mining sector, particularly where customers require short-term solutions to help boost production rates during commodity upswings, without constructing a new static plant over a longer lead time."

The plants are available in various configurations, starting from primary crushing solutions comprising a hopper, a vibrating grizzly feeder and a jaw crusher, to secondary crushing and screening stations consisting of a vibrating screen and a cone crusher. These solutions can be combined using simple mobile conveyors to configure a plant that can produce aggregates for various end-user requirements.

Weir Minerals uses equipment that is within the dimensions and weights that can be accommodated on a multi-axle trailer, in line with legal road limits. Machines selected generally allow for the construction of plants in the 50 to 350 tonnes per hour (tph) range.

"One of the major benefits of our wheeled plant concept is that it eliminates the complex-



ity of having a diesel engine and tracks on the mobile unit itself, which requires additional maintenance over and above the crushers and screens themselves," says Masekwameng. "Wheeled plants can also be transported on

the highway depending on the size and road regulations within the customer's jurisdiction. That means customers only need to hook the plant to the back of a truck and off they go."

POWER GENERATION

Powering sustainability through EV battery manufacturing for a greener future

BY DIEDERIK VENTER, DISCIPLINE LEAD:
HVAC, MEDICAL GASES AND INDUSTRIAL
UTILITIES, WSP IN AFRICA

TO achieve global net zero emissions by 2050, manufacturers are embracing more sustainable practices. A key player in this has become the electric vehicle (EV) sector which is expected to account for 60% of global car sales by 2030.

This means that EV batteries have become a crucial enabler in the shift from traditional fossil fuels to cleaner, renewable energy sources.

The global EV battery market is set to grow from US\$132.6 billion in 2023 to US\$508.8 billion by 2033, representing a compound annual growth rate of 14.4%. This surge is driven by a combination of environmental awareness about climate change and air pollution, and government policies that are accelerating the adoption of EVs. The result has seen an increase in the construction and planning of battery manufacturing plants across Europe and North America.

Additionally, advances in battery technology are driven by the need for increased driving range, faster charging times and improved overall performance.

The battery ecosystem

Of course, there are various complexities to consider when it comes to the EV battery market. It provides a clear example of the circular economy in action where resources are kept in use for as long as possible and waste is minimised.

The lifecycle of an EV battery begins with the extraction of raw materials such as lithium, cobalt, and nickel. This upstream process is followed by the midstream stage where these materials are transformed into the critical components for battery cells. The downstream process sees the individual cells assembled into battery packs that power EVs.

Finally, the end-of-life phase puts the spotlight on responsible battery recycling. As such, recycled materials can be reintroduced into the upstream, midstream and downstream processes, promoting a closed-loop system that reduces waste and reliance on virgin materials.

Understanding the process

One of the key focuses in EV battery manufacturing facilities is the clean and dry rooms. These rooms enclose the majority of the production lines to ensure tightly controlled environments specifically designed to eliminate threats posed by moisture and contaminants, which are vital for maintaining battery integrity during production.

Without such measures, risks such as electrode corrosion, short circuits, and thermal runaway pose significant threats to battery performance and safety.

Regulations play a crucial role in shaping the future of EV battery manufacturing. They ensure safety, promote sustainability, and enforce ethical sourcing of raw materials. For instance, regulations such as the UN Model Regulations and the EU's Conflict Minerals Regulation guide manufacturers towards safer and more environmentally responsible practices. There is also the new European Battery Regulation (NBR) that enforces stringent standards to ensure that battery manufacturing adheres to safety, sustainability, and ethical sourcing guidelines.

For our part, one of the many solutions WSP has spearheaded is the development of a simulation Battery Optimisation Lifecycle Tool (BOLT). This analyses heavy-duty fleet electrification and optimisation to help public and private transit fleet operators determine quickly which routes are best suited for conversion to electric buses. BOLT can simulate a transit agency's entire route system and create a system network Electrifiable Index that identifies the routes/scheduled blocks that can be electrified today.

Future potential

Fortunately, the battery technologies that power EVs are continually evolving. Currently, lithium-ion batteries offer high energy density and longevity but rely heavily on mining practices that have significant social and environmental impacts. This is where emerging tech-

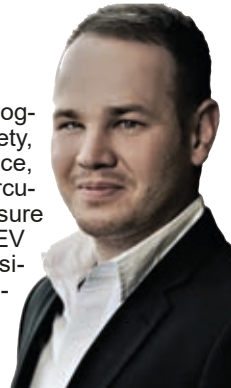
nologies like sodium-ion and solid-state batteries present alternatives that might reduce these impacts due to their readily available raw materials, potentially lower toxic material use and higher efficiency.

Developing better, more sustainable EV batteries must therefore become a priority. More efficiently using resources to minimise waste and reduce reliance on virgin materials through closed-loop systems is essential. Ethical sourcing practices that ensure raw

materials are extracted under fair working conditions are also vital.

Consider a world where EVs can travel just as far as fossil-fuel-powered cars on a single charge. That future hinges on developing batteries that pack more energy into a smaller space. Creating longer-lasting batteries also means fewer replacements are needed, thereby reducing the environmental impact and overall costs associated with battery production.

By focusing on technological advancements, safety, and regulatory compliance, and by embracing a circular economy, we can ensure that the growth of the EV market contributes positively to global environmental goals.



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SA needs natural gas for cleaner transition, continued industrialisation

GAS has an important role to play in South Africa's energy transition journey, says Prashaen Reddy, a partner at global consultants, Kearney. Reddy is an expert on energy matters and his comments come amidst the calls for public comments on a draft Gas Master Plan. The Plan was released for comment at the end of April.

Reddy says the southern African region has recently been fortunate with several gas finds in Mozambique, South Africa, and Namibia that allow for the development of indigenous resources to drive industrialisation, social development, and economic growth.

Today, the industry employs at least 70,000 people and contributes between R300 billion and R500 billion a year to South Africa's GDP based on the existing indigenous gas supply.

"Additionally, to maintain and grow the industrial base there are few substitutes readily and economically

available for gas in the energy-intensive industries, and hence industrialisation may further decline should no gas solution be found in the years ahead," says Reddy.

Gas-to-power is another critical enabler to stabilising the power sector as we balance our energy mix from being primarily driven by coal to other technologies as outlined in the recent IRP.

"Our research on balancing energy security with sustainability explores how 'natural gas is playing a pivotal role in the global energy transition. To support the transition to a cleaner energy mix, there is a need for intermittent reliance on cleaner hydrocarbons (such as natural gas) for energy security, until such time that renewable/ nuclear capacity (or other baseload technologies) can be built up and installed," he says.

Notably, natural gas is the cleanest and most emission-friendly fossil fuel that is also suitable for peak generation shaving and baseload provision.

Additionally, it is a good enabling partner for more variable renewable energy sources due to higher operational flexibility and lower capital costs.

Conversely, natural gas still produces greenhouse gas (GHG) emissions and is limited by inadequate gas infrastructure.

This highlights the need to abate GHG emissions from natural gas production and usage which can be done through carbon capture, utilisation, and storage (CCUS). To address the lack of critical gas infrastructure, significant international and regional financial investments are required.

Financiers will find it difficult to be clear cut on defunding hydrocarbon projects due to the commercial viability, markets, and returns the sector still generates in the medium term. The world will be unable to simply switch off hydrocarbons which still make up over 80% of the world's energy mix.



Image: Pixabay

"Gas will play an important role as a transitional hydrocarbon, offering security and a reduced envi-

ronmental impact until renewable and nuclear capacity can be added," says Reddy.

Global group launches BESS for microgrids

SCHNEIDER Electric, the global leader in digital transformation of energy management and automation, has launched a Battery Energy Storage System (BESS) designed and engineered to be part of a flexible and scalable, architecture. BESS is the foundation for a fully integrated microgrid solution that is driven by Schneider Electric's controls, optimisation, electrical distribution, and renowned digital and field services.

The climate crisis and geopolitical tension mean energy security is not guaranteed today. Resilience can be improved by ensuring access and storage of various on-site energy sources quickly, efficiently, and safely.

As an integral part of a microgrid system, BESS captures energy from different sources, accumulates this energy, and stores it in rechargeable batteries for later use. Battery Energy Storage is the only Distributed Energy Resource (DER) that enables the widest range of customer energy-use cases, including resiliency, demand-charge reduction, services, renewable self-consumption, decarbonisation of electrical energy, and variable generation smoothing.

"Reliable energy supply cannot be taken for granted.

With over two decades of expertise in power conversion and batteries, storage is at the core of Schneider Electric's proposition. Now, we are proud to introduce a solution that has been thoroughly designed and tested," said Bala Vinayagam, Schneider Electric's senior vice president of microgrids. "Our aim is to deliver this cornerstone technology to the market that enables multiple use cases for resilience, sustainability, and energy cost savings. We are providing greater demand-side flexibility at scale to the microgrid sector by enabling our local expert partners to deliver a safe and compatible system."

- Comprised of battery modules, battery racks, a battery management system, power conversion unit, and controller, BESS has been tested and validated to work as an integral component with Schneider Electric's microgrid systems. It is also fully integrated into the software suite, which includes



EcoStruxure Microgrid Operation, and EcoStruxure Microgrid Advisor. With defined commercial references and options, selections include configuration and advanced safety controls, BESS minimises energy costs and delivers the following features:

- Full integration capabilities: The all-in-one enclosure seamlessly incorporates pre-integrated components streamlining site engi-

neering, construction, and installation processes while minimising labour and material expenses. The paralleling capability enables multiple BESS units to function as a unified entity. This comprehensive integration encompasses inverters, batteries, cooling systems, transformers, safety features, and controls, ensuring optimal performance and efficiency.

- Easy installation and maintenance: The ready-to-deploy system, featuring tested, validated, and documented architecture (TVDA), facilitates installation processes, delivering efficiency compared to traditional custom-engineered designs. The solution also seamlessly integrates with Schneider Electric's Energy Management Systems (EMS), significantly reducing integration time and minimising field errors.
- Safety compliant: The solution is fully certified and compliant using ANSI/UL standards for deployment across multiple geographies

and has a cutting-edge fire safety system design.

- Resilience: The system offers bidirectional connectivity to the grid, providing the flexibility to operate as either grid-connected or off-grid. With the capacity to store energy for immediate access during outages, BESS can deliver up to 2 MW of power when needed.
- Peace of mind: Comprehensive services and support are available throughout the lifecycle of the project and warranty execution for optimal maintenance and care.

The BESS is available as a 20-foot NEMA 3R Enclosure that is AC coupled and available from 250kW to 2MW in 2h and 4h configurations.

"Our new Battery Energy Storage System marks a significant step forward in enabling storage and connection with Distributed Energy Resources that is flexible enough to meet the future energy demand needs," Vinayagam said.

"Amidst the global pursuit of net-zero objectives and the imperative for an enhanced grid, we are working closely with our trusted network of partners to deliver the technology required to fully unlock the potential of simplified battery storage and power conversion."

Why efficient filtration is critical in hydraulic systems

HYDRAULIC systems, which operate under extremely high pressures with tight tolerances, are susceptible to wear from abrasive particles and therefore require efficient filtration to offer adequate protection of equipment, explains Hanli Schutte, product specialist industrial filtration, BMG. "Contaminants can enter the hydraulic system from several sources - the manufacturing process of system components or exposure to environmental dirt, dust and moisture during production. Problems also result from low quality or unclean hydraulic fluids used during the filling process, or from wear over time.

"Because filtration is the only effective defence against wear and tear when contaminants are present, it is critical that effective filter components are used to ensure dependable performance, high efficiency and extended service life of machinery and vehicles. Without a structured control and contamination prevention program, premature equipment failure is likely to occur, resulting in unnecessary downtime and costly replacement of parts.

"BMG Fluid Technology's filtration solutions comprise a wide range of

fluid power components and systems, supported by the team's broad technical capabilities to ensure fluids - including oil, fuel and lubricant oil - operate within the required cleanliness standards.

"Our customers understand that without the implementation of a structured control and contamination prevention program, premature equipment failure is likely to occur, resulting in unnecessary downtime and costly replacement of parts."

BMG's premium filtration partner - Filtration Group - manufactures advanced filters that ensure that the fluid in the circuit of the process meets the required cleanliness class.

Design and materials used for the construction of filter housings and elements exceed industry standards and through the latest technologies, like PulseShield and e-protect, the dirt holding capacity of filter systems is increased to ensure full functionality, even in the most challenging environments and applications.

Filtration Group's product portfolio comprises desiccant breathers, that are designed to replace conventional dust caps or breathers of equipment like hydraulic units,

where there are high humidity and temperature fluctuations. With this highly efficient filtration system, contaminated air passes through layered filter media, which blocks particles from entering the breather. A bed of silica gel absorbs any moisture in the air to keep equipment dry. This technology prevents problems associated with condensation, ageing of hydraulic oils, degradation of additives and corrosion.

Within a hydraulic system, there are typically four locations where filters are required - suction line, return line, pressure line and reservoir breathers. Suction filters are designed to remove large particles that accumulate within the hydraulic fluid reservoir, while safety filters can be positioned inside the reservoir or outside the reservoir on the suction side of the pump. The objective of return line filters is to remove contaminants from the hydraulic fluid before it is returned to the reservoir. Pressure line filters - also known as point of use filters - remove fine particles before application and can

withstand high operating pressures and temperatures. Breathers on reservoirs protect the hydraulic system from environmental contaminants, like dust and moisture.

An important feature of Filtration Group filter elements is they are fully compatible with housings of other filter manufacturers and increase the efficiency of the installed filtration system.

BMG's OMSA ECO spin-on elements enable fast and convenient protection for the off-loading and dispensing of bulk fuel. This range includes fuel and water separating filter elements for particle removal of 6 micron and 3 micron. These filters are used extensively in BMG's custom-designed offloading and dispensing filtration systems.

In addition to the design and manufacture of new bulk fuel systems for oil and lubrication purification, BMG's technically skilled team also offers a refurbishment service for existing systems. Typical applications are in machine tools, mining, power generation, sugar, pulp and paper, cement, marine and hydraulic

industrial equipment.

These systems are designed and manufactured to exact customer specifications and generally include all mechanical, electrical and pneumatics as required. Bulk fuel systems can be designed as permanent in-line or off-line systems, as well as portable systems that can be used in multiple applications.

In order to provide customers with continuous contaminate-free fuels and lubrication solutions, BMG's Field Services department offers services that include the inspection, service and maintenance of bulk fuel and hydraulic systems. Oil analysis is conducted by BMG's qualified tribologist, to ensure the required cleanliness of oils and fuel.

BMG's fluid technology services include solutions for fuel and industrial filtration systems, hydraulics and pneumatics, lubrication, hydraulic hose and fittings, as well as instrumentation, pumps and industrial valves.

Through the company's specialist skills - and a dependable stockholding of components, BMG is able to meet high demand from customers for dependable filtration services, throughout the African continent.



SUPPLY CHAIN, DISTRIBUTION & WAREHOUSING

Leading logistics group expands in the EC

BIDVEST International Logistics has expanded its presence in the Eastern Cape by investing in a third branch in Gqeberha.

"The integration of our road freight and warehousing operations last year enabled us to optimise resources, expand operations and diversify our supply chain services," explains director Marcus Ellappan. "We have invested in the new facility, which offers more space and the opportunity to increase our product offering, as well as cater for long-term growth."

Ishan Hutharam, GM Cape region, elaborates, "We identified an ideal property in the heart of the Deal Party area, strategically located 15 km from the Coega port and 10 km from the harbour and car terminal, offering clients a centralised hub for cargo operations."

"BIL's Gqeberha footprint comprises a 10,000 sqm chemical facility, catering for both hazardous and

non-hazardous storage and handling services. The additional facility adds approximately 22,000 sqm of covered (warehouse) and under-covered (yard) warehousing solutions and is fully compliant for the storage and distribution of FMCG products. It will also cater for our telecommunications customers to store and distribute networking equipment. A fleet of vehicles, ranging from 1-tonners super-links, complements our service offering."

Hutharam adds that due to the size of the yard, BIL can facilitate vehicle and container loading, offloading and storage solutions. This secure area is also suitable for the automotive market, where BIL plays a major role in supply chain services.

"We also maintain a robust presence in East London, where we are conveniently situated 1,5 km from the harbour and car terminal. Our warehousing facilities cover 8,000

sqm for various commodities, including chemicals. Our distribution fleet comprises various vehicle configurations to complement our service offering."

Backed by a skilled workforce, globally recognised warehouse and transport management systems and rigorous Safety, Health, Environmental, Risk and Quality (SHERQ) processes, BIL ensures a data-driven, compliant and high-quality logistics experience.

"With offices in all major ports and airports nationwide, our end-to-end logistics services encompass air, sea and customs brokerage through our International Logistics Division, along with warehousing and road transport via our Overland Logistics Division. We serve diverse industries and leverage our global partnerships, extending our reach to 250 offices in 120 countries."

Concludes Ellappan, "The new



Gqeberha facility is attracting significant interest from both existing and potential customers keen on expanding their operations. We are

passionate about aligning with our customers' objectives and committed to fostering transparency, collaboration and operational efficiency."

Forklifts continue to evolve with supply chains

FORKLIFTS have made a considerable impact on material handling since industrial production scaled up drastically between the 17th and 18th centuries. Consequently, there was a need for faster, safer, and more efficient mechanisms for moving materials.

According to Jozua Coetzee (pictured), Eazi Access business development manager: sales and after-sales, "Manufacturers are constantly trying to improve designs for better safety, efficiency, and cost reduction. The materials handling industry has been experiencing significant advancements in automation over the last few years. Automated guided vehicles (AGVs), robotic arms, and conveyor systems are increasingly integrated into warehouses and factories to streamline processes. These technologies are reducing labour costs, improving efficiency, and enhancing safety."

Moreover, the emergence of arti-

cial intelligence and machine learning is enabling more sophisticated automation, with systems capable of autonomous decision-making and adapting to changing conditions. The ongoing development of Industry 4.0 principles is further driving the adoption of automation in materials handling, promising a future where smart factories and warehouses operate seamlessly.

In our roadmap towards a smart future, decarbonisation is increasingly playing a crucial role in the forklift industry as companies seek to reduce their carbon footprint and meet sustainability goals. Several key factors illustrate this:

1. Electric forklift adoption: There's a growing shift towards electric forklifts, which produce zero emissions at the point of use. These forklifts are powered by batteries, making them more environmentally friendly compared to traditional internal combustion engine

forklifts running on fossil fuels. Electric forklifts are also quieter and have lower operating costs in the long run.

2. Hydrogen fuel cells: Hydrogen fuel cell-powered forklifts have gained attention as a decarbonisation solution. They offer the advantage of quick refuelling and longer operating hours compared to battery-powered forklifts, improving efficiencies. Companies are exploring hydrogen infrastructure and investing in fuel cell technology to reduce emissions.

3. Sustainability goals: Many companies are setting ambitious sustainability targets, which include reducing greenhouse gas emissions. Switching to cleaner forklift technologies aligns with these goals and contributes to a greener supply chain.



4. Regulatory compliance: In regions with strict emission regulations, such as the European Union, forklift operators are incentivised to transition to low or zero-emission equipment. Compliance with these regulations is driving the adoption of cleaner forklift technologies.

5. Innovations in battery technology: Ongoing advancements in battery technology, including lithium-ion batteries, are increasing the efficiency and range of electric forklifts, making them more attractive to businesses seeking to decarbonise.

In summary, decarbonisation is pushing the forklift industry toward cleaner and more sustainable technologies, including electric and hydrogen fuel cell-powered forklifts.

This transition not only reduces carbon emissions but also aligns with broader sustainability initiatives and regulatory requirements.

Eazi Access is a market leader in work-at-height and material handling solutions. The company's offering includes rental, sales, servicing, and training across a range of industries and applications. "We have partnered with global trusted OEM brands such as Linde Material Handling, one of the world's largest manufacturers of forklift trucks and warehouse equipment, specialising in industrial trucks, fleet management, driver assistance systems and service offerings. The products of this premium brand allow us to bring in complementary ranges that enable Eazi Access to be a full solutions partner to our customers, supporting their equipment needs and sustainability goals. This is backed by our 23 branches across South Africa and sub-Saharan Africa," says Coetzee.

Supply chain body restructures, welcomes new directors

AT its recent Annual General Meeting (AGM), the professional body for supply chain management (Sapics) shared the successful outcomes of an organisational restructuring embarked on last year. The association also reaffirmed its commitment to elevating, educating and empowering supply chain professionals across Africa and announced the appointment of three new directors who bring a wealth of experience and expertise to the Sapics supply chain community.

Sapics president MJ Schoemaker reported back on the end-to-end transformation that started in 2023. "The board took on a more operational role in the running of the association. Each board member was allocated a different operational pillar to focus on, to enable Sapics to best meet the needs of our community. The impact of what we started in 2023 is showing results in 2024. The focus was to work smarter, leaner and to concentrate on elements that brought value to the association, from a network point of view, as well as financially." Schoemaker noted that the results are now evident in Sapics' balance sheet and in increased engagement by members.

Three new directors were voted onto the Sapics board at the AGM. Linda Cham is an accomplished supply chain professional with 15



New directors, from left, Linda Chan, Sandipa Maharaj and Selepe Phetla

years of experience in the FMCG and logistics industries. He is currently the head of logistics at Varun Beverages/BevCo. Selepe Phetla is the national transport manager for bpSA. He is a seasoned supply chain professional with 19 years of experience in various roles. Phetla was voted onto the board as a director this year, having worked on the membership pillar. Sandipa Maharaj, chief financial officer at Inhance, is a CA by profession. Her career has spanned countries and industries and includes deep experience in supply chain and logistics.

The new directors join Thato Moloi, Jonathan Mphake, Karen Pretorius, Nikita Reddy, MJ Schoemaker and Jan Tukker. Schoemaker will continue to serve as Sapics president for the next six months, after which a president-elect will be appointed.

At the AGM, Sapics and Schoemaker, who chaired the meeting, thanked outgoing directors David Crewe-Brown, Solly Engelbrecht and Chanti Wilson for their service and dedication.

Schoemaker said that Sapics was excited about the upcoming 46th annual Sapics Conference, which takes place in Cape Town from 9 to 12 June 2024. "This year is set to be bigger and even better than past events. With the challenges facing the supply chain profession, where change has been the only constant for some years, it is more important than ever for our community to have this critical opportunity to get together to learn, share knowledge and network," she said. Sapics is hosting this year's conference in association with the Southern African Association of Freight Forwarders (SAAFF).

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Strong healthcare supply chains are needed to fight against diseases like HIV, TB and malaria

SUPPLY chains get goods from manufacturers to end-users. They also save lives. Strong health supply chains are critical to getting lifesaving medicines and health products to where they are needed, when they are needed, including to the most vulnerable communities. Efficient supply chains are essential in the fight against killer diseases like HIV, tuberculosis (TB) and malaria, and are the backbone of health systems.

The 2024 SAPICS Conference will feature a Global Public Health Supply Chain Track that will run throughout the conference programme. Organisers of the conference have lined up exceptional local and international experts who

will share their insights on healthcare supply chain issues at this year's event.

The SAPICS Conference is Africa's leading event for the supply chain profession. Now in its 46th year, the 2024 conference takes place in Cape Town from 9 to 12 June 2024. It will see hundreds of attendees from around the world gather to network, learn and share knowledge through panel discussions, presentations, workshops and case studies. SAPICS (The Professional Body for Supply Chain Management) is hosting this year's conference in association with the Southern African Association of Freight Forwarders (SAAFF).

Supply chain digitalisation benefits patients

Supply chain digitalisation is topping the agendas of organisations around the world. Digitalised supply chains enable better visibility, improved optimisation and collaboration, better accountability, traceability, compliance and security. Vital learnings from the private sector's supply chain digitalisation journeys are being applied in public health and delivering benefits to organisations, health workers and especially patients.

The health supply chain focused sessions on this year's line-up include a powerful presenta-



tion comprising case studies from the World Health Organization (WHO) on the impact of supply chain digitalisation on the health systems of low and middle income countries (LMICs). United States based Jyothishwaroop Jayaprakash, who works with the WHO, will co-present at SAPICS 2024 alongside Ramy Guiguis and Carl Leitner. He outlines the topic of their presentation: "Supply chain processes that ensure the availability of medicines for patients are integral to healthcare systems. Digitalising supply chain processes benefits organisations, health workers and, most importantly, patients. The lack of a comprehensive approach to digitalisation in LMICs has resulted in fragmented systems that are impacting patient safety. To address this, USAID and WHO are developing handbooks to guide LMICs in public health digital supply chain transformation. Our presentations will share the architectural and standards approaches adopted in these handbooks to enable end-to-end visibility and commodity traceability. We will present case studies highlighting successful adoption of these approaches by various countries."

Control towers

Supply chain control towers will be in the spotlight in another important healthcare focused presentation at this year's SAPICS Conference. Control towers can transform supply chain execution. Speaker Chad Davenport will explore the design, functionality, implementation and benefits of supply chain control towers in global health supply chains. His experience includes working directly with operational teams to oversee the procurement and delivery of more than US\$6 billion worth of health commodities to more than 100 countries for USAID and the Global Fund to Fight AIDS, tuberculosis and malaria.

Governance is critical

Global health supply chain specialist Tom Brown will share his insights on supply chain governance with conference delegates. "In health product supply chains, which typically involve a wide range of organisations, governance is critical to supply chain success," he says. "Understanding how effective governance models work, and why they work, can help governments, donors and implementing partners to work together on supply chain reforms that will stick. This session will share some insights from USAID global health projects and draw some lessons that can be applied in health product supply chains," he explains.

The last mile is often the toughest

The conference will feature a round table discussion exploring the challenges of last mile delivery and sharing viable solutions, particularly in the realms of emergency aid and disaster relief services. Dr Iain Barton of Health 4 Development will moderate these important discussions. Additionally, the transformative role of technology, such as drone delivery, will be a focal point in the programme, with insights from experts including Professor Prashant Yadav from INSEAD and Oliver Defawe from VillageReach.

"Lives depend on healthcare supply chains. We are delighted to have a distinguished array of speakers, sponsors and organisations from the global health supply chain profession joining us once again this year. They will contribute invaluable insights into supply chain best practices and engage in discussions on the complexities, challenges and successes within these intricate supply chains," says MJ Schoemaker, president of SAPICS. "Our objective is to foster a collaborative environment where supply chain professionals from diverse sectors can meet to emphasise the fundamental pillars of robust supply chains: best practices and well-equipped, empowered individuals to manage them."



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COMPANY & PRODUCT NEWS

Construction of Coega automotive plant to begin 'shortly'

STELLANTIS, the world's third-biggest automotive manufacturer by volume, and South Africa's largest development funder, the Industrial Development Corporation (IDC) have concluded key milestones that will lead to a Joint Venture (JV). This puts one of the final building blocks in place for the establishment of the country's latest automotive manufacturing site, paving the way for construction to begin shortly at the Coega Special Economic Zone (SEZ).

According to the Department of Trade, Industry and Competition (DTIC), The investment estimated at R3 billion is expected to facilitate the creation of massive employment opportunities in the Eastern Cape. The Coega Development Corporation (CDC), which is supplying the ground on which the factory will be built, has begun preparing the site for the start of construction.

"I welcome the progress made with concluding all modalities with Stellantis that will enable construction to commence this year and start of production of a new auto model to roll off the assembly line by the end of 2025. The South African auto

industry is Africa's largest producer of cars, bakkies and trucks and this new investment by Stellantis will consolidate the country's position, helping us to achieve the goal of producing 1,4 million vehicles by 2035.

The biggest attractions for new investors are the size of the domestic market together with the auto industry masterplan, which supports local production for both South Africa and export markets. Stellantis has a strong growth vision with an excellent range of vehicles in its global stable and we look forward through this investment to increasing the range of locally manufactured cars available to motorists," said Ebrahim Patel, Minister of Trade, Industry and Competition.

"It's heartening to see the manner in which the combination of expertise within the collective of the DTIC, the IDC, CDC and Stellantis have united to form a cross-functional team that is making excellent progress," said Patel "It's this teamwork that will realise not only having Stellantis as South Africa's eighth OEM, but most importantly in realising the plans for employment and investment in South Africa and support our indus-

trialisation drive. We look forward to a long and mutually beneficial relationship between Stellantis and South Africa."

Stellantis Middle East Africa (MEA) COO, Samir Cherfan; Stellantis SA MD Mike Whitfield; IDC interim CEO David Jarvis; and CDC acting CEO Themba Khoza echoed Patel's sentiment saying that the progress made thus far was in line with their respective organisation's strategic development goals.

"The construction of this plant is critical to Stellantis' Dare Forward 2030 strategy. This strategy also speaks to the South African industrialisation plan which is a very important tool in helping us achieve our target to produce a million units in the MEA region by 2030 - a factor that will help us attain 22% market share in this region. Our medium to long-term objective is to ensure that 90% of vehicles sold in the MEA region are sourced from our production plants in this region," said Cherfan.

The project is a major vote of confidence in South Africa as an investment destination and as a gateway into Africa. "We are very proud of

being involved in this; the construction of this plant is a major statement of faith in this country and the capacity of South Africans to be entrusted with running a project of this magnitude. This is a factory of which we can all be proud, not just because of what it will represent to the people of the Eastern Cape, but also because of the technological advances that it will incorporate and the environmentally conscious way that it has been planned, will be built and will be operated," added Cherfan.

All fauna and flora have been successfully removed from the site and rehomed as per the environmental impact study conducted by Coega. "Coega is focused on delivering the finest plant for Stellantis, reinforcing the Coega SEZ as an automotive hub in the country, in line with its vision to be the leading catalyst for the championing of socio-economic development" said Koza. The impending construction of the Stellantis factory has acted as a catalyst for other investors, he said. "We have had numerous requests to support the automotive sector in Coega and to rapidly grow our planned supplier park."

"The new company to house the Stellantis-IDC JV is on track to be registered. The milestones concluded thus far will help to kick start a project that will significantly improve the economic fortunes of the Eastern Cape," said Jarvis. He added that the IDC is pleased to be partnering with such a reputable automotive manufacturing company of Stellantis' stature. "Stellantis's success with other manufacturing plants around the world is well-known. Together, we are highlighting the IDC's intent to continually participate and drive investment to develop the regional automobile value chain," Jarvis commented.

The Stellantis Greenfield project in brief:

- Construction will be completed by the end of 2025
- A high level of localisation is targeted at launch (35%)
- Ultimate production volume of 50,000 units a year, with the majority destined for export
- 1,000 new jobs to be created directly
- Thousands of hours to be invested in training to develop local teams to global standards

Why digitisation is vital to ensure resilient supply chains

FOR any business involved in local or global trade, a robust supply chain is key to sustainable success, says Bobby Madhav, FNB head of trade and structured trade and commodity finance.

The simple reality is that trade disruptions come in many forms, from natural disasters and geopolitical crises to trade conflicts and even pandemics; and in all these scenarios, a strong supply chain is required to keep a business running, avoid losses, and retain its edge over the competition.

Reliable supply chains are also key to a company's ability to build trust with its customers, by showing that it can deliver no matter the circumstance. At the same time, the world of trade is always changing, and so are the rules. Companies need to keep up with new regulations, show that they can manage risks well, and demonstrate an ability to move quickly when required to do so.

In short, a strong supply chain isn't just about getting through tough times; it's about being prepared for the future and staying competitive in a fast-moving world. And there are few investments that a business can make that can deliver all these supply chain efficiencies and resilience than digitisation.

Here's why:

- 1. Enhanced supply chain visibility** - Digital tools like the Internet of Things (IoT), GPS, and RFID give you a clear view of where your business goods are at all times. This level of insight allows you to stay ahead of potential disruptions, manage your inventory smarter, and forecast demand and supply with greater precision.
- 2. Smarter, data-enabled operations** - Vast data collection and analysis across the supply chain can reveal important patterns and trends, and even help

you to predict possible snags. Using advanced analytics and machine learning, your company can make well-informed decisions, optimise routes, and refine operations.

- 3. Streamlining operations and costs through automation** - Robotics and artificial intelligence are revolutionising trade by reducing manual tasks, cutting down on errors, and slashing operational costs. This automation extends to warehouses, inventory management, and order fulfilment, freeing up your human resources for more strategic initiatives.

- 4. Better communication and collaboration** - Digitisation effectively connects all the dots in your supply chain. Suppliers, manufacturers, logistics providers, and customers can all interact more effectively on digital platforms, and if you extend this digitisation to include the cloud and blockchain, it's easy to ensure that everyone is on the same page, knows what they need to know, and avoids miscommunication and misunderstandings.

- 5. Integration and accountability** - A digitised supply chain is an integrated one, ensuring accountability and enabling all parties - from procurement to distribution and beyond - to be more proactive or responsive, as required.

- 6. A personalised customer experience** - Digital tools enable your business to tailor not just its offerings, but the way they are offered, to individual customer needs, at scale. This level of customisation means customers have access to real-time information on product availability, shipping, and delivery via e-commerce platforms and customer portals - all of which go a long way towards improving customer satisfaction and loyalty.

- 7. Improved risk management and compliance** - Digitisation

helps companies stay compliant with international regulations and standards. Digital platforms offer businesses the tools to monitor changes and adhere to compliance needs, reducing the risk of penalties and fines.

- 8. Cost savings** - By optimising your supply chain, digitisation can result in substantial cost reductions. In addition to saving on labour costs associated with manual processes, effective analytics can help to reduce inventory overheads, and digitally-driven predictive maintenance can help to decrease the cost of equipment repairs.

- 9. Enabling global sourcing** - Digitisation can open up a world of suppliers, providing you with the opportunity to 'shop around,' for the most competitive pricing and best quality. Virtual tools and cloud-based systems also make it easier to manage projects across borders and time zones, giving your business an additional edge through effective global sourcing.

While all of these benefits make a compelling case for investing in supply chain digitisation, the process can be intimidating and, if not approached correctly, costly too. This is why FNB has made the entire process of digitisation simple, accessible and cost-effective through its award-winning First Trade 360 solution. Designed to simplify the complexities of trade and logistics, First Trade 360 provides businesses with a comprehensive platform for real-time management, live tracking, and insurance of shipments. It's a fully integrated system that seamlessly delivers all the benefits of digitisation, from improved efficiency to increased resilience, via a single user-friendly dashboard.

By embracing digitisation, whether facilitated by FNB's First Trade 360 or not, businesses involved in local and global trade can future-proof their operations and set a new standard for efficiency and competitiveness, delivering not just an improvement in day-to-day operations, but a vital transformation in the resilience of their supply chains.

SA's auto sector notes decline in exports

THE domestic automotive industry is celebrating the centenary of vehicle manufacturing in the country in 2024. In the Automotive Business Council (naamsa) Q1 2024 review, CEO Mikel Mabasa commented that the development of the automotive industry has been a remarkable story of innovation, entrepreneurship, and economic growth in South Africa and the industry is keen for 2024 to turn out to be another memorable year. He said the new vehicle market at present is performing in line with expectations of a year of two halves consisting of a taxing first half, but with brighter economic prospects expected during the second half of the year. Nearly all new vehicle market performance indicators tilted into negative territory during the first quarter 2024, underscoring the constrained economic environment in the country, amplified by weak consumer and business demand.

Despite an easing in loadshedding and port delays during the quarter, near-term domestic economic activity remains weak amid subdued household spending. The country continues to face the challenges of persistent inflation and a stagnant economy. Inflation data suggests that the path back to the central bank mid-point target of 4,5% has slowed and become more uncertain, which in turn impacts the timing of the commencement of the interest rate cutting cycle. The South African Reserve Bank still forecasts real GDP to expand by 1,2% in 2024 and 1,4% in 2025, with growth to remain low due to inadequate energy supply, deteriorating logistics capacity along with low business and household confidence.

NEV market

Following the release of the DTIC's EV White Paper in December 2023, the announcement in the February 2024 Budget Speech of an introduction of an investment allowance for new EV investments, set to commence in March 2026, to claim 150% of qualifying investment spending in the first year, is a crucial step in attracting investments, fostering innovation, and enhancing the growth of the automotive sector within South Africa, Mabasa said.

Following a record export performance in 2023, vehicle exports lost momentum during the first quarter 2024. Sluggish global growth, a persistent bullish inflationary environment and soaring geopolitical tensions remain persistent factors impeding vehicle exports. However, an easing in global inflation could see a softening in interest rates in the second half of the year which would support the South African automotive industry's export performance.

Mabasa noted that record vehicle exports ensured that the automotive industry outperformed the rest of the manufacturing sector as the value of vehicle and automotive components to 148 countries once again set a new record, reaching R270,8 billion in 2023, comprising a substantial 14,7% of total South African exports.

Key features of Q1 2024 include

- First quarter 2024 aggregate industry employment as of 31 March 2024 totalled 33,374 reflecting a decline of 5 jobs compared to the 33,379 industry headcount as of the end of December 2023;
- Aggregate new vehicle sales during the first quarter 2024 recorded a decline of 5,6% compared to the corresponding quarter 2023 and a marginal increase of 0,2% compared to the fourth quarter 2023;
- New energy vehicle (NEV) sales by 15 industry brands increased by 82,7% from 1,665 units in the first quarter 2023 to 3,042 units in the first quarter 2024;
- Average industry capacity utilisation levels during the first quarter 2024 reflected the ongoing supply chain disruptions caused by port congestion and delays on vehicle production while the ongoing global semi-conductor shortage impacted OEMs differently;
- Aggregate capital expenditure by the major light vehicle manufacturers in 2023 amounted to R5,2 billion, linked to new generation model investments;
- South African vehicle production market share increased from 0,65% in 2022 to 0,67% in 2023, but its global vehicle production ranking remained at 22nd.

Auto manufacturer supports Agri Eastern Cape

ISUZU Motors South Africa has announced a new partnership with Agri Eastern Cape, solidifying its dedication to supporting the growth and sustainability of the agricultural sector in the province.

"Our partnership with Agri Eastern Cape aligns with our values, collaboration, and community support. This partnership underscores our commitment to the agricultural community and reflects our belief in the importance of sustainable growth within the sector," says Celestin Ndhlovu, vice president of planning, marketing and corporate communications.

Agri Eastern Cape is a membership-based organisation and strategically aligns with external stakeholders who have the resources to empower their operations.

Jason Kümm, operations manager at Agri

Eastern Cape says, "It is extremely important for Agri Eastern Cape to partner with brands with not only a strong local presence but who also understand the importance of the agricultural sector and have a vested interest in the success of the commercial farmers of the Eastern Cape."

The work done by the working team at Agri EC includes a lot of travel, far and wide and at times to some extremely remote areas. A partnership such as this one is not only an enabler from a vehicle perspective but also from an empowerment perspective.

"While our core business is the well-being of commercial farmers, a large sector of our work focuses on rural communities at large which assists all community members in Rural South Africa. Isuzu South Africa, through the

sponsorship of this vehicle, has made a massive contribution to supporting these functions which include, but are not limited to safety in rural areas, trade and economics and environmental affairs," says Kümm.

Isuzu Motors South Africa is dedicated to producing reliable products tailored to meet the specific needs of the agricultural sector. "With a steadfast commitment to quality and reliability, Isuzu continually strives to deliver vehicles and solutions that farmers and agricultural businesses can depend on.

Whether it's robust utility vehicles for field work, durable trucks for transporting goods, or efficient machinery for various agricultural operations, Isuzu lineup is designed to withstand the rigour of farm life while maximising productivity and efficiency," Ndhlovu says.



Celestin Ndhlovu, Isuzu vice president, product & corporate planning, marketing and corporate affairs and Jason Kümm, operations manager, Agri Eastern Cape

Water management challenges solved with submersible and centrifugal pumps

IN a market inundated with such a vast range of choices, Wacker Neuson stands tall with its comprehensive range of superior quality, ultra-reliable pumps for fast and efficient water management.

Wacker Neuson, a globally renowned name in light and compact equipment, is proud to highlight its advanced pumping solutions, designed to tackle the toughest conditions across sub-Saharan Africa. "Engineered for the effective management of clear water, water with some solid content, mud, and slurries, Wacker Neuson pumps are a testament to our commitment to product quality, reliability, and efficiency," says Stefan le Roux, Wacker Neuson sales manager for sub-Saharan Africa. "Manufactured from superior quality components to endure the rigours of the African landscape and designed for almost every scenario, our pumps are more than just equipment; they are lifelines for the agricultural, mining, quarrying, and construction sectors."

The company's robust pump line-up of submersible, clearwater, and trash pumps is tried, tested, and proven across the sub-Saharan region. Wacker Neuson's pumps are ideal for a wide range of water drainage applications such as water removal from flooded mines, construction and quarry sites, pond drainage, and more. Le Roux adds that these pumps' high suitability for emergency water drainage applications also makes them popular with municipalities.

Wacker Neuson's range of self-priming centrifugal trash pumps provides a rapid solution for efficiently removing water containing solid



debris. They are ideal for general dewatering applications, covering virtually any scenario where water extraction is necessary. This line-up includes lightweight, high-performance models like the PT2A, PT3A, and PTS4V, along with heavier-duty options such as the latest addition, the PT6 unit, which was introduced to the local market in mid-2023. Also available from Wacker Neuson is the PST2 400 submersible pump. These pumps are also designed with portability in mind, featuring compact and lightweight designs, as well as ergonomic handles or lifting points for easy transportation and handling on job sites.

Le Roux explains that all the pumps Wacker Neuson provides to the sub-Saharan region

are top-tier, German-engineered products, meticulously designed for premium quality and equipped with essential features for effective water management. However, there was a distinct demand in the mining, quarrying, and agricultural sectors for a durable, cost-effective solution capable of withstanding Africa's challenging conditions. "Thus, we found the PT6 pump to be an ideal choice. Renowned for its rugged design and competitive pricing, the PT6 is tailored for emerging markets, ensuring efficient and dependable performance in demanding environments."

Wacker Neuson's competitive edge in the pump market is centred on four primary differentiating factors - engine and component quality, self-priming functionality, aftermarket support, and brand reputation. The power units in all the Wacker Neuson pumps offer unparalleled quality and reliability. Additionally, the pumps incorporate high-quality components such as impellers and seals.

Wacker Neuson's larger trash pumps are fitted with a double/twin-cylinder engine. This makes them super-efficient, super-reliable, and long-lasting with higher capabilities and performance compared to other pumps. "We are one of the very few manufacturers who offer this," confirms Le Roux.

Le Roux describes the self-priming functionality of various Wacker Neuson pumps as a game changer. "It is widely understood that a pump cannot operate with air in the system. Our self-priming pumps address this issue by

bypassing air through a valve. This ensures that once in position, the pump can be started immediately and safely, eliminating any risk of damage to its components. By eliminating the time-consuming task of manual priming, these user-friendly pumps are easy to set up and keep productivity levels high."

The company's commitment to aftermarket support further enhances the value proposition for customers. "We are squarely focussed on maintaining high parts and stock availability to minimize downtime, maintaining an 84% to 85% fill rate over a long period, assuring customers of access to essential components whenever needed."

Regular maintenance goes hand in hand with pump performance, longevity, and reliability. "Never skip a service," advises le Roux and explains that even the smallest detail such as using the correct oil, can make a huge difference.

With a legacy of quality and innovation, Wacker Neuson continues its industry leadership as a specialist supplier of efficient, reliable, and competitively priced pump solutions designed with the end-user in mind. Le Roux concludes: "What sets our pumps apart is not just their superior engineering but their total value offering of high performance, efficiency and uptime, low operational costs, and rapid Return On Investment (ROI). We're not just selling pumps; we provide water management peace of mind, demonstrating that finding the right partner for effective water management is 'all it takes'."

Measuring DC voltage with a digital multimeter

VOLTAGE measurements are normally taken to establish that voltage exists at a given point and to ensure that the voltage is at the proper level. The nine-step process outlined below is a quick guide to how to take these measurements.

1. Turn the dial to DC voltage. Some digital multimeters (DMMs) also include DC millivolts. If uncertain of which to choose, start with DC voltage, which handles higher voltage.
2. First, insert the black probe into the COM jack.
3. Then insert the red probes into the V Ω jack. When finished, remove the probes in reverse order: red first, then black.
4. Connect the test probes to the circuit: black to the negative polarity test point (circuit ground), and red to the positive test point. Most modern multimeters automatically detect polarity. When measuring DC voltage, the red lead does not need to contact a positive terminal or black to touch the negative. Just recognise if the probes touch opposite terminals, a negative symbol will appear in the display. With an analogue multimeter, red leads should always touch a positive terminal and black a negative terminal. If this procedure is not followed, the meter will be damaged.
5. Read the measurement in the display.

Other useful functions when measuring DC voltage

6. Modern multimeters default to Autorange based on the function selected on the dial. To select a specific fixed measurement range, press the 'range' button multiple

times until the desired range is selected. If the voltage measurement falls within the range of a lower DC millivolts setting, follow these steps:

- Disconnect the test probes.
 - Change the dial setting to DC millivolts.
 - Reconnect the test probes and read the measurement.
7. Press the 'hold' button to capture a stable measurement. It can be viewed after the measurement is complete.
 8. Press the 'min/max' button to capture the lowest and highest measurements. The DMM beeps each time a new reading is recorded.
 9. Press the relative 'rel' or delta ' Δ ' button to set the DMM to a specific reference value. Measurements above and below the reference value are displayed.

Avoid the common mistake of inserting test probes into incorrect input jacks. If measuring DC voltage, be certain to insert the red probe into the input jack marked V, not A. The display should show the dcV symbol. Placing test probes in A or mA inputs and then measuring voltage will create a short in the measurement circuit.

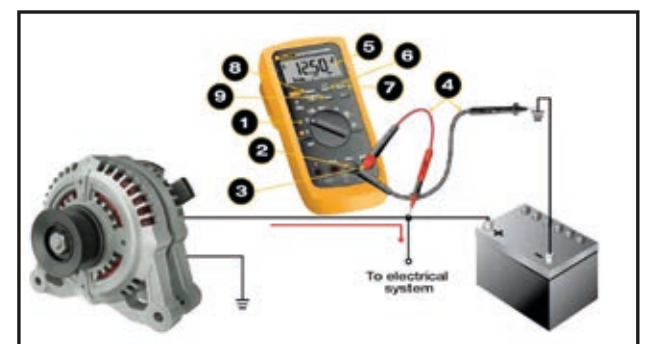
Voltage measurement analysis

- AC voltages can vary widely (between -10% and +5% of the power source rating) and cause no problems in a circuit. Yet with DC voltages, even small variations may indicate trouble.
- The exact amount of acceptable DC voltage variation depends on the application. '=

- In some DC applications, large DC variations are not only acceptable, but intentional. For example, the speed of DC motors can be adjusted by varying the amount of DC voltage supplied. In this application, the measurement of DC motor voltage depends on the setting of the voltage regulator.
- When taking and comparing DC voltage measurements, refer to the manufacturer's specifications for specific values in the circuit.
- A fully charged auto battery rated for 12 volts may have an open-circuit voltage ranging from 11.9 V to 12.6 V (typically 2.2 V per cell).
- A measurement of 11.9 V indicates a dead battery.
- A measurement of 12.6 V indicates a battery with a 100% charge. In-between measurements indicate a charge of less than 100%.
- A battery with a slightly higher voltage measurement (3% to 5%) is much better than a battery with a lower measurement. A DC voltage variation below the normal rated voltage indicates a problem.

AC and DC voltage measurements

- In some applications, DC voltage measurements may be taken in circuits that include AC voltage.
- To ensure maximum accuracy of a DC volt-



Steps for measuring DC voltage with a digital multimeter.

age measurement, first measure and record the AC voltage. Then measure DC voltage by selecting a DC voltage range (using the 'range' button) that is the same or higher than the AC voltage range.

Some DMMs can simultaneously measure and display the AC and DC components of a signal. The DMM display can show results in three ways (see illustration below):

1. The AC portion of the signal appears in the primary display and the DC portion in the smaller secondary display.
2. The DC reading can be switched to the primary display while the AC drops to the secondary (on most DMMs).
3. The combined AC+DC value – the signal's equivalent rms signal value.

Technology boosts animal feed solutions

SWISS multinational, Bühler is revolutionising the animal feed industry through continuous investment in grinding technology and customer collaboration. At SA Grain's Nampo Harvest Day 2024, the company highlighted essential equipment for feed manufacturers to optimise their production processes. Enhancing its credibility, the company is a member of the Animal Feed Manufacturers Association of South Africa (AFMA).

"In addition to exceptional efficiency and ease of maintenance, our Granulex 5 Series is characterised by its high throughputs. Distinguished by flexibility, each hammer mill is specifically configured according to its field of application," explains Alec

Audie, area sales manager at Bühler Johannesburg.

Customer benefits include lower energy consumption (>10% reduction in energy per ton of ground material), increased performance (>10% capacity increase due to optimised modules), and ease of use (50% reduction in changeover speed, an industry best).

"The Granulex 5 Series hammer mill enables a giant leap forward in production rates, energy efficiency, an optimal granulation profile and easier maintenance and operations across a range of industries," says Audie.

It is used mainly for demanding requirements in stringent industries such as animal feed, which requires

grinding of raw materials from very coarse to fine grinding. The feeder is mounted on top of the hammer mill to obtain continuous and even feeding of the raw material into the grinding chamber.

The integrated separator and magnet removes impurities such as stones and metal parts. The mill offers excellent access for screen and hammer exchanges through two large sliding doors. For added safety, the doors are interlocked with the rotor, meaning the mill cannot be started as long as the doors are opened.

Bühler also offers technology for smart pelleting process control. PelletingPro increases yield by up to 1% by controlling the final pellet

moisture level. Specific mechanical energy consumption can be reduced significantly with higher throughputs at the same motor rating. Enabling stable production conditions at constant moisture levels allows for a 20% throughput increase.

Pellet moisture is continuously optimised independently of any seasonal effects. The Multi NIR Inline System measures and ensures a constant moisture level in the batch mixer. The final moisture level of the pellet once it leaves the cooler is automatically controlled by up to ±0.5%. This leads to a yield increase of up to 1% and ensures constant product quality.

PelletingPro includes a smart algorithm to continuously optimise pellet moisture independently of any

seasonal or weather effects. The Pelleting Essential dashboard on Bühler Insights is an integral part of the service and its purpose is to continuously track performance.

Bühler spends up to 5% of turnover on research and development annually to improve both the commercial and sustainability performance of its solutions, products, and services. In 2023, some 12,500 employees generated a turnover of CHF 3.0 billion. As a Swiss family-owned company with a history spanning 164 years, Bühler is active in 140 countries around the world and operates a global network of 105 service stations, 30 manufacturing sites, and Application & Training Centers in 25 locations.

Employees at the centre of successful PDS technology integration

THE continued focus on integrating Proximity Detection Systems (PDS) in South African quarries and surface mines highlights a significant shift towards enhanced safety and regulatory compliance. This move, directed by the Department of Mineral Resources and Energy (DMRE) regulations, underscores the critical nature of technology in mitigating workplace accidents.

As the pioneer of PDS in South Africa and with more than eighteen years of experience in the field, Booyco Electronics believes that the human factor is a crucial element in the successful deployment of such technologies.

Anton Lourens, CEO of Booyco Electronics, argues that beyond the technical installation, the acceptance and willingness of employees to embrace these tools and adopt them in their daily operations are fundamental to their effectiveness. He advocates for a comprehensive approach to change management that involves all organisational levels, from front-line workers to top executives, ensuring a unified understanding of the technology's purpose, benefits and operational impact.

Lourens points out that the successful implementation of PDS technologies not only promises to enhance safety in quarries and sur-

face mining operations but also influences other key operational aspects, such as equipment availability and productivity. He emphasises the importance of clear communication about the technology's objectives to facilitate smoother adoption and minimise resistance among employees.

Drawing from Booyco Electronics' experience, Lourens highlights the setbacks in safety and productivity that can arise from inadequate change management, stressing the need for employee involvement in the process to foster a sense of ownership and understanding.

The change management strategy at Booyco Electronics begins

with a technical readiness assessment to tailor the PDS technology to the unique conditions of each site. It encompasses educating stakeholders about the technology's capabilities and limitations through specific deployments, managing expectations and providing training that explains the rationale behind the investment and its operational mechanics.

Lourens also underscores the importance of ongoing training and system optimisation based on user feedback to ensure the continuous success and improvement of the



PDS technology. Additionally, he cautions against the unintended consequences of technology dependence, advocating for proactive management and continuous education to maintain the safety benefits of PDS implementations.

Operators benefit from automated machine health monitoring



GROWING global population coupled with rapidly advancing technologies are propelling an ever-increasing demand for essentially anything that consumers require, from infrastructure to food, which is placing mounting pressure on mines and manufacturing plants to produce more, faster and more economically.

"In order to achieve maximum production and overall plant optimisation, operators are demanding more from their heavy industrial machines and equipment, which are expected to run ultra-reliably and perform better and more efficiently for longer, while paying close attention to safety and environmental compliance," says John Storm, SKF Connected technologies manager. "Given that machines and equipment typically operate in stringent environments, condition monitoring and regular maintenance go hand in glove in achieving the trio of high performance, availability and reliability. Manual monitoring by technicians using portable devices is time-consuming and counter-productive, sapping resources and compromising worker safety."

By switching from a manual to an automated machine monitoring system and data collection process, Storm says that operators will increase the availability of their rotating equipment and subsequently optimise their operations.

SKF Enlight Collect IMx-1 vibration and temperature sensors automatically monitor the condition of rotating parts, enabling operators to collect critical data on the health of their machines and equipment more often from previously inaccessible

locations, requiring fewer technicians and creating a safer environment. More frequent data collection, i.e. hourly or daily instead of weekly or even monthly, leads to early problem detection and machine failure prediction. Operators are subsequently able to proactively carry out preventative maintenance, reducing costly unplanned downtime and maintenance costs, increasing machine life cycles and optimising asset reliability.

The fully automated process sends large volumes of collected data to a host computer network for uploading to the SKF Cloud that is connected to SKF Rotating Equipment Performance Centres where the data is analysed by SKF application specialists. Automated data interpretation and expert fault verification systems allow operators to interpret large volumes of machine data, gaining invaluable insights into the performance of their rotating equipment.

The IMx-1 system relies on a 'mesh network' which allows sensors to relay data between each other, enabling data to be routed around radio obstacles such as pipework. As the 'mesh network' is self-forming, the system is quicker and easier to deploy compared to other wireless systems such as Wi-Fi or Bluetooth. In addition, the innovative way in which the system handles bandwidth and the sensors' power consumption, leads to a long battery life.

The compact, battery-powered, easy-to-install SKF Enlight Collect IMx-1 enables operators to build an automated machine monitoring system powered by Cloud-based IoT solutions and AI-driven analytics. Mounted to a bearing housing, the IMx-1 sensor forms a scalable network, wirelessly detecting and processing a raft of common/critical health data from the rotating assets including unbalance, misalignment, high temperatures, looseness, electrically-induced vibration and early stage damage to bearings and gears.

The tough ingress protection rating of IP69K ensures that the robust

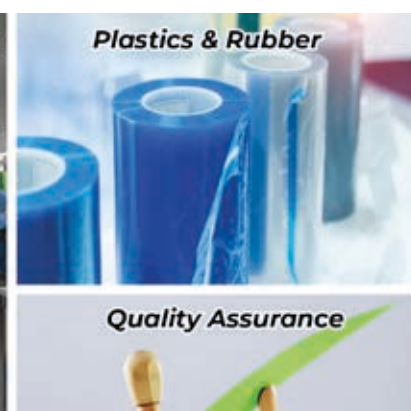
SKF Enlight Collect IMx-1 will deliver reliable operation in highly taxing conditions typically found in industrial environments including high exposure to dust, dirt, oil, grease, contaminants, flying debris, temperature changes, wind, rain, high-pressure

hot water wash-downs and more.

With increased visibility across their entire asset network, operators will achieve their goals of high machine availability, increased productivity, improved safety and a reduced environmental impact for a

sustainable, efficient and profitable plant.

SKF Enlight Collect IMx-1 is available on a fee-based contract to assist operators to seamlessly transform from a manual to a fully automated system.



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Second poultry plant opts for 'Cooling-as-a-Service'

BUILDING on the successful partnership at its Kariega facility, Sovereign Foods has entered into a 15-year Cooling-as-a-Service (CaaS) agreement with Energy Partners (EP) to meet growing production demands as efficiently and reliably as possible at its Hartbeespoort (HBP) facility.

Under the terms of the agreement, EP, the prominent energy solutions company and pioneer of CaaS in South Africa, decommissioned two separate, outdated refrigeration plants at the HBP facility, building a separate, central refrigeration plant. In addition to meeting Sovereign's efficiency and cooling needs, the new plant would also have to adhere to stringent noise level regulations.

Solutions through partnership

Per the CaaS model, EP invested 100% of the capital – approximately R92 million to design and construct the plant and will operate and maintain it over the 15-year agreement period, shifting operational risks such as downtime, efficiency, and service and maintenance away from

the poultry producer.

"We're exceptionally proud of the work we've done – and continue to do – for Sovereign," says EP's Coenrad Ehlers, asset management and service. "We have replaced outdated infrastructure with a new, state-of-the-art ammonia refrigeration system that ticks so many efficiency and sustainability boxes. The true value, however, will be seen in how Sovereign will now be able to invest the capital and human resources that they've freed up into their core business, especially increasing production."

Sovereign's engineering manager, Stephan Oosthuizen, notes the ease of executing the project despite production challenges: "EP managed to reduce disruptions to the absolute minimum, taking into account that Sovereign produces six days a week, as well as the challenges of transferring loads from the old plant to the new."

"You cannot manage what you cannot measure"

The new system features a three-stage ammonia refrigeration process with evaporative condensers

and water-based oil cooling. The Combined Refrigeration Capacity is 5.47 MWR.

Several elements have been included to boost operational efficiency and sustainability, including a master control system that optimises the entire refrigeration process, compressors and condensers that are equipped with variable speed drives for superior energy management, as well as a heat reclaim mechanism that utilises waste heat to preheat water, reducing boiler fuel use.

Secure remote access to the plant and a 24/7 monitoring service enables a proactive approach to sustaining plant efficiency and allows for a proactive approach to operation and maintenance.

As Oosthuizen asserts, "You can't manage what you can't measure, and EP's monitoring of the plant enables us to quickly identify areas for improvement in our process."

To combat noise pollution, the plant room has been constructed with double brick walls, rock wool ceilings and specialised acoustic doors. Other noise reduction strategies include strategically placed con-



The Hartbeespoort Abattoir is the second time Sovereign has opted for Energy Partners' Cooling as a Service model. The poultry producer entered into a similar agreement with the prominent energy solutions company at its plant in Kariega, Eastern Cape.

densers and noise attenuator filters in the ventilation system.

Designed for future scalability, the system can adapt to increasing cooling demands and has already achieved a baseline energy savings of 20 percent, thanks to EP's digital twin technology, which is vital given the site's electricity constraints.

As Ehlers concludes, "It's very

rewarding that Sovereign has chosen to leverage EP's CaaS model for a second time, having already seen its value at its Kariega site. The ongoing partnership between our companies shows an unwavering commitment to seeking out and employing innovative, sustainable solutions. We look forward to the next chapter."

Ngqura harbour master takes on continental role

CAPTAIN Thulani Dubeko (pictured), harbour master at the Port of Ngqura has been elected as the new president of the African Harbour Masters' Committee (AHMC). The AHMC brings together African harbour masters to share ideas on the management of all aspects of maritime port operations.



tomor service. The role includes advancing the African Integrated Maritime Strategy 2050, which aims to improve maritime conditions related to environmental and economic development within African countries.

Growing up in Lusikisiki, Dubeko had always dreamed of working in the military. He had no exposure to the maritime sector until his interest was stimulated while working at the South African Navy. After his time in the Navy, he pursued a qualification in maritime studies at the Durban University of Technology. In his second year of studies in 1998, he was awarded a Transnet Bursary.

Upon acquiring his qualification, he joined TNPA as a trainee in marine operations and received marine pilot training in Rotterdam. Dubeko progressed through various positions within the South African port system including tug master, marine pilot, marine operations manager and deputy harbour master before assuming his current position.

Dubeko had served as vice president of the Committee since October 2022.

AHMC announced Dubeko's election during the 14th International Harbour Masters' Congress held recently in Tangier, Morocco. AHMC is a chapter of the International Harbour Masters' Association. It is responsible for ensuring the safe, secure, efficient, and environmentally sound conduct of marine operations in port waters.

Dubeko's recognition by his peers attests to the abundance of a skilled and highly motivated workforce to drive productivity for Transnet's business sustainability and success, according to Transnet National Ports Authority (TNPA).

As the president of the AHMC, Captain Dubeko will be responsible for developing Harbour Masters across the continent through the exchange of knowledge and training to help improve safety and cus-

Battery-powered forklifts - a greener option

AS the global trend in supply chain management shifts towards environmentally friendly handling solutions, battery-powered forklifts are gaining popularity across many industries, including warehousing, pharmaceuticals, manufacturing, logistics and agriculture.

Battery-powered forklifts offer numerous advantages over traditional diesel, gas or petrol-powered forklift trucks, including energy efficiency, minimal noise pollution, absence of exhaust fumes and lower servicing expenses.

"We understand that it is not always easy for our customers to know which forklift truck is the most efficient for each specific task. Every machine has been developed with different features for performance, stability, safety, maintenance requirements and service life," explains Brenton Kemp, managing director of Criterion Equipment, exclusive distributors of TCM forklift trucks in southern Africa. "We work closely with our diverse customer base by offering an expert advisory service on which machine is best suited for every application, to ensure the highest levels of productivity and improved safety on site."

"And for our customers looking

for eco-friendly solutions in logistics, there are many benefits in transitioning to electric forklifts for sustainable operations, including reduced carbon emissions, enhanced energy efficiency and improved overall operational efficiency. We have an impressive stockhold-

ing of our complete range of TCM forklift trucks, including FB18 and FB25 battery-powered models, ready for immediate delivery. These versatile forklifts come equipped with container masts and hydraulic sideshifts.

"It is also important for our customers to be able to rely on a dependable repair service and the quick supply of OEM approved parts."

Criterion Equipment's TCM FB electric forklift trucks, which are engineered for high productivity and safe operation, are known for reduced operating costs, precise controllability, low noise levels and a modern ergonomic design.

Key features of this range include



energy-saving capabilities ensuring low electric consumption and extended working hours per charge, smooth acceleration, precise control, and excellent manoeuvrability, even in tight spaces. Users have the option of traditional lead-acid or lithium-ion batteries for enhanced propulsion, three

ECO modes (Power, Normal, Custom) for optimised performance in various conditions and a regeneration system for efficient recovery of electric energy.

Other notable features of TCM battery-powered machines include a rigid frame design, an IPX4 rating for durability and protection against water ingress and a specially-designed operator's compartment for improved comfort and reduced fatigue.

Criterion Equipment's service includes a national field services facility, which provides assistance during breakdowns, the repair and maintenance of machines and maintenance contracts.

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