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MARCH 2023



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Capital Equipment News is published monthly by Crown Publications

Editor:

Adriaan Roets
capnews@crowns.co.za

Advertising manager:

David Ingham
david@crowns.co.za

Design:

Ano Shumba

Publisher:

Karen Grant

Deputy publisher:

Wilhelm du Plessis

Circulation:

Karen Smith

PO Box 140

Bedfordview 2008

Tel: (011) 622-4770

Fax: (011) 615-6108

www.crowns.co.za

Printed by Tandym Print

The views expressed in this publication are not necessarily those of the editor or the publisher.

<https://crowns.co.za/capital-equipment-news>



Total circulation Q3 2022: 12 695



TECHNOLOGY WILL DRIVE THE AGRICULTURAL INDUSTRY

Visiting the AgriTech Africa Conference offered a delightful insight into how technology is ensuring growth within agriculture. Completely autonomous tractors from CASE, or hyper-efficient machines from John Deere, with expert telematics are a reality.

Even more exciting is that the agriculture industry represents many advancements we're seeing in capital equipment, and these industries work in tandem since they form part of the same advancements in most, if not all, industries that rely on machines.

The pivotal role of technology in driving agriculture forward was the focus of AgriTech Africa Conference in Pretoria.

The first day of the conference focused on agricultural technologies that empower farmers. The Expo area showcased the latest products from the agricultural sector, aiming to encourage the sector's participation in the fourth industrial revolution (4IR).

Technology has taken the guesswork out of farming, it also eliminates costly errors that come with guesswork, explained Professor Ferdi Meyer, Executive Director of the Office of Food and Agricultural Policy (BFAP). He advises farmers to think outside the box.

A panel discussion moderated by Lynette Francis-Puren discussed the impact of technology on job security in rural communities. Lennox Plaatjies, operations manager at PALS, said research showed machines would not replace labour, but that machines are vital going forward.

"We need to look at the technology that improves our work, not replaces it. It

should allow us to do better work and make communities further afield part of the value chain. There are so many technologies that can help us produce food, and we shouldn't be afraid," said Plaatjies.

The implementation of a new system should be done with due diligence and careful consideration of the practical benefits that will be realised.

Professor Johan Steyn of *AI for Business* points out that unless you are in the trenches and understand what is happening on the ground, you cannot implement change that really makes a difference. Often the simplest changes can improve how people work and how systems work, he said.

With the advent of the Internet of Things (IoT), the agricultural sector is at increasing risk of cyberattacks, the most recent of which crippled systems that manage animal feed and produce vaccines.

Billy Petzer, CSIR's Cybersecurity Systems Researcher, found that modern supply chains are very long and complex, making them difficult to defend against cyberattacks. He also referred to studies showing that attacks on the agricultural sector were on the rise.

Looking at these figures, South Africa does not paint a positive picture: "South Africa is the 8th worst ransomware attack in the world. We are ranked 5th worst cyber security in the world," he says.

Overall, agriculture has proven a lower level of cybersecurity because attacks are not perceived to be as frequent as in the banking industry, for instance.

It is believed that 98% of incidents are caused by human error, such as phishing emails, organisations would do well to educate their employees about cybersecurity.

BFAP senior analyst Gerhard van den Burgh said in response to the widespread threat of load shedding, many agricultural sectors have adapted to adopt renewable energy, but there is still a long way to go to go off-grid and reduce the risk of blackouts.

"The current high load shedding is a crisis we should not waste, and there is a huge opportunity for agriculture to rethink its energy supply and find better solutions. However, the biggest issues are access to finance and determining the payback period. We Policies that introduce energy

alternatives and provide tax incentives are urgently needed. The transition to renewable and green energy is very good for the climate, but cost is a big issue."

Speaking at the conference, Jason Brantley, director of Asia, Africa and the Middle East for John Deere, reiterated the company's vision for 2030 to enable the most profitable, productive and sustainable farmers in every market they operate in.

"We will deliver production system advantages by creating smart machines and intelligent solutions that customers can utilise to confidently manage their operations remotely, anytime and from anywhere," says Brantley.

John Deere's vision encompasses three verticals: machines, smart technology, and lifecycle solutions.

"We have a technologically stacked organisation uniquely positioned to develop artificial intelligence that can be employed across the farming organisation to yield the best results. Products flowing from our stable are aimed at optimising productivity, while lifecycle solutions ensure that the customer is supported to get the ultimate value out of their product for many years to come."

With sustainability as a core focus of agricultural operations, Brantley noted the increasing demands placed on farmers to increase production, which in turn increased pressure on the environment.

"John Deere has the technology to drive these efficiencies. We have combined solutions to reduce the number of trips across a field. Precision technology allows farmers to focus on an individual seed, unlocking far more potential per millimetre. Having the right equipment has become more important than ever before, which is why we are committed to providing evolving solutions that keep up with farmer's needs," said Brantley.

John Deere has committed to having full connectivity across all machines by 2023. This will require fitting older machines with connectivity technology, assisting farmers in accessing faster repairs and tools for precision farming.

Page through this month's issue of Capital Equipment News and you will see the construction, mining and transport industries is employing the same strategies and alongside this, technology is driving more efficient industries. 🌱

Adriaan Roets - EDITOR



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SMARTER THAN EVER AS CATERPILLAR LAUNCHES NEW VISIONLINK

The new VisionLink provides a complete, integrated fleet management solution for asset tracking to maximise machine availability and optimise utilisation. The platform's updated, intuitive user interface helps customers efficiently manage their entire fleet, regardless of manufacturer.

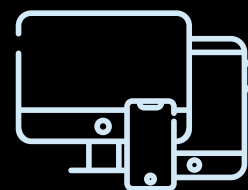
Accessibility is key when it comes to new telematics, and Caterpillar made sure that its new VisionFleet is tough to beat. With enhanced asset insights, the system pulls broader data from owned, leased or leased equipment and accessories, enabling organisations to make more informed asset management

decisions.

Cloud-based and accessible across desktops, tablets and mobile devices, the new VisionLink combines My.Cat.Com, the Cat app and previous versions of the VisionLink app into one fleet management solution.

To simplify the process for customers, all user accounts, personal settings,

QUICK TAKE



VisionLink is cloud-based and accessible across desktops, tablets and mobile devices

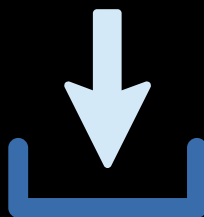
account configurations and device subscriptions will be seamlessly transitioned from these previous platforms to the new VisionLink.

New App

The new VisionLink mobile app replaces the Cat app, allowing users to access their data anytime, anywhere. A new



The system allows users to determine who can access VisionLink by defining employee access levels



A new mobile app, available for download for Android and iOS platforms, allows users to stay up-to-date on key metrics, asset location, fuel levels, idle time and more from their smartphone



Software updates and hardware are available for existing machines and smart dozer blades to operate grade control if new blades and kits are installed

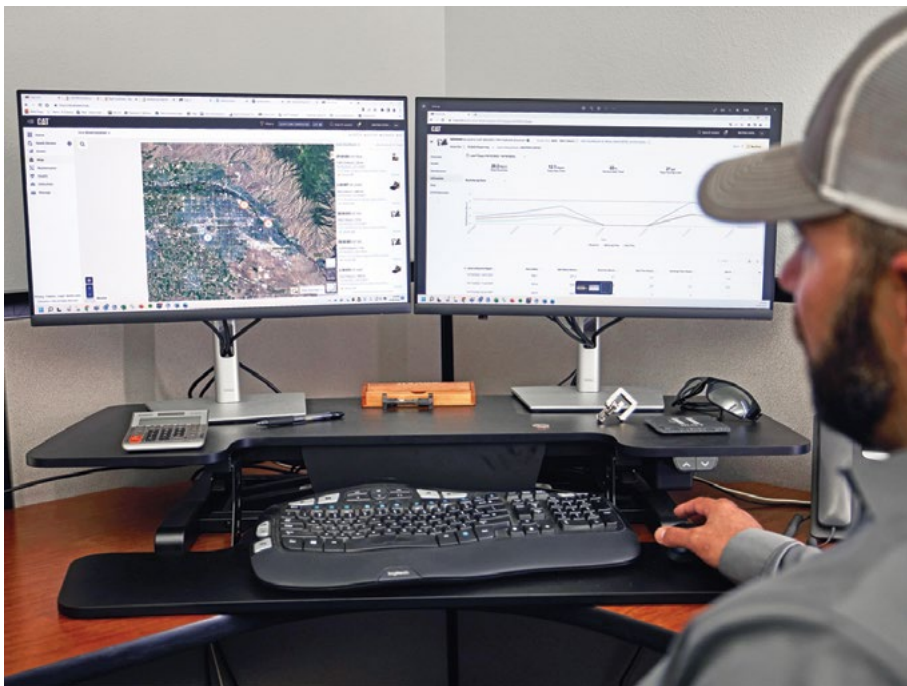
mobile app, available for download for Android and iOS platforms, allows users to stay up-to-date on key metrics, asset location, fuel levels, idle time and more from their smartphone. It uses all the key elements of a smartphone and is designed with portability in mind.

Several update functions support customers in various everyday situations.

VisionLink's new 'Requirements Check' feature enables customers to focus on key items, highlights areas requiring action, and provides a workflow for scheduling tasks. In 'Needs Check', new task management features allow customers to quickly create tasks or create tasks from scratch. It allows assigning tasks and ensures that progress and completion of

tasks are recorded.

The new VisionLink is a powerful platform for monitoring machine health, error codes, fluid analysis and maintenance plan checks. Key personnel can be assigned to receive notifications when facilities require immediate maintenance to avoid downtime. Customers can also request service and



VisionLink Productivity

is a cloud-based application that helps customers analyse job site performance and increase productivity based on actionable intelligence, improving their business efficiency and ultimately profits.

order parts directly from their Cat dealer through the new VisionLink mobile app.

Fleet management

With fleet management unique to each area of operation, customers can assign machines an in-app name of their choice. An easy-to-use dashboard supports asset management by project, group, and geofence. Additionally, customers can determine who can and cannot access VisionLink by defining employee access levels. Custom reports can be

automatically generated and categorized to facilitate tasks such as identifying underutilized equipment.

Technology integration

To make it easier for our customers to manage their assets and increase their productivity, we are pleased to announce the evolution of VisionLink, including the renaming of Cat Productivity to VisionLink Productivity. By optimizing the digital products, their functionality and integrations, the company is delivering

a first-class and consistent customer experience. The renaming of Cat Productivity is the first step in integrating with the new and improved VisionLink.

VisionLink Productivity is a cloud-based application that helps customers analyse job site performance and increase productivity based on actionable intelligence, improving their business efficiency and ultimately profits. It scales for operations of any size, regardless of asset brand, and can be accessed from anywhere via mobile phone, tablet or desktop.



VisionLink today also offers customers optimized subscription tiers designed to reduce complexity and provide the right mix of features for customers of all sizes. The new VisionLink continues to provide a single standard of telematics data per machine to answer critical questions about assets, including daily machine location, utilization, fuel usage, maintenance reminders and integration with Caterpillar's extensive digital ecosystem.

New blades and kits

VisionLink isn't the only announcement from Caterpillar. Caterpillar announced new options for the Cat Smart Grader Blade and Smart Dozer Blade. The new external control kit for GB120 and GB124 smart grader blades expands the use of these blades to Cat D and D2 series SSL and CTL machines, enabling customers with previous model fleets to run smart blades. The new 3D grade control kit uses existing connections to easily add automatic blade control to the Cat Smart Dozer Blade.

Cat Smart Grader Blades set the standard for machine and attachment control integration. Previously, these smart blades were made available for customers with Cat D3 series SSL and CTL machines. The new external control kit provides customers with a means to run smart grader blades on all D-series and select older Cat machines. Simplifying operation, GB120 and GB124

blades automatically detect whether they are being operated on a D3 series or a machine equipped with an external controller.

The new external control kit includes a third joystick for operating blade raise/lower, tilt, angle and wing functions like smart control for D3 series machines. In addition, it includes the wiring harnesses, a RAM mount, brackets and all the necessary hardware required for smart grader blade control. Compatible with Cat Grade and Earthworks GO! systems, the new external control features selectable modes for left, right and tandem control. Standard cross-slope assist and full proportional control of all functions improve operating efficiency.

Expanded demolition and sorting grapples

Expanding the Cat Demolition and Sorting Grapple line, the new G306 and G308 models are specifically designed for 5- to 6-ton and 7- to 10-ton mini hydraulic excavators respectively. These new models excel in waste, recycling and heavy-duty material handling applications where precise material placement is required. With open and close functions controlled by the machine's first auxiliary function and rotation head handled by the second, these grapples deliver fast and productive material handling with 360-degrees of bidirectional rotation.

A slim design makes it easier to get

The new external control kit includes a third joystick for operating blade raise/lower, tilt, angle and wing functions like smart control for D3 series machines.

into tight spaces, and material capacities range from 160 l (0.21 yd³) with the G306 to 240 l (0.31 yd³) for the G308. Vertical perforated shelves offer high wear resistance, positive penetration, good load visibility and easy positioning, while the oversized heavy-duty cylinder with load holding valve delivers constant clamping force, even when maneuvering the grapple or machine. Providing reliable operation with low maintenance intervals, the swing bearing features a single-ball heavy-duty, internally driven design. For longer life, the weld-on base edge design is made of HB500 Brinell equivalent material and bolt-on cutting edge (BOCE) from high-strength, abrasion-resistant steel.

A first for Cat Tiltrotators

The first hydraulic attachment expansion for the Cat Tiltrotator (TRS) product family, the new Cat G206 and G208 Multi-Purpose Grapples expands the grapple technology in combination with the TRS6 and TRS8 models for 5- to 10-ton mini hydraulic excavators. These models allow maximum maneuverability with TRS attachments, and an integrated bracket provides minimal offset to optimize performance of grapple functionality.

The grapple design is optimally matched to the tilt rotate system, and the rotation of the TRS allows for quick and easy material engagement. To avoid any bending torques in radial direction, these grapples feature a welded box structure. With grapple arms and arm edges built with AR450 steel, the arm offers high abrasion resistance for longer wear in extreme conditions. 🌟



Chane Ontong, Elka Du Piesanie and Olivia Kumalo

CALLING 10 000 DRIVERS TO MAKE SOUTH AFRICA'S ROADS SAFE

Holland Highway Heroes 2023 is geared to be a life-changing competition run by Holland Trucking. Not only are truck and bus drivers invited to make roads safer, but they can also impactfully ensure road carnage is reduced. But it's not just the responsibility of drivers, in fact, the competition gives a platform for heavy-vehicle fleet managers and drivers to show how their sector is operated, and why awareness from all road users is important to ensure the economy is kept alive, and lives are saved.

Identifying and rewarding the best truck and bus drivers in South Africa is no simple feat, but since 2015 Holland Highway Heroes have played an instrumental role in identifying the best drivers in the country.

Holland Highway Heroes has grown significantly since 2015 when just 220 drivers entered – in 2022, 2 400 entrants competed in the competition.

The 2023 iteration of Holland Highway Heroes promises to be the biggest iteration of the competition yet. After tracking and rewarding truck-driving excellence for the past eight years, this year, the competition hopes to attract 5 000 truck and 5000 bus drivers from across South Africa, as well as its very first cohort of bus drivers.

For the second time, the competition welcomes all truck and bus fleets, and not only those insured by Holland.

Holland's aim is to highlight and acknowledge those drivers who go beyond the call of duty to deliver their cargo and



"We're deeply invested in entrenching safe driving practices and creating shared value by making South Africa's roads safer for all road users – whether you're a fleet owner, broker, driver, community member, or one of our sponsor partners in this initiative. Our message is: we are where you are."

Paul Dangerfield, Holland Trucking
National Operations Manager



Nicci Scott Anderson, CEO of Commercial Transport Academy, and female truck drivers



More than 75% of land freight in South Africa is conveyed by road



There were an estimated 12 545 road fatalities in 2021 in South Africa



Holland Highway Heroes hopes to attract 5 000 truck and 5000 bus drivers from across South Africa



The broader mission of the competition is to cut risk and reduce road-accident claims and loss of life

QUICK TAKE

After tracking and rewarding truck-driving excellence for the past eight years, this year, the competition hopes to attract 5 000 truck and 5000 bus drivers from across South Africa, as well as its very first cohort of bus drivers.

passengers safely and on time by driving responsibly and considerably – ultimately leading to safer driving conditions for all road users.

The competition in a nutshell

More than 75% of land freight in South Africa is conveyed by road, and accidents



Paul Dangerfield, Hollard Trucking National Operations Manager.

cost the country billions of rands every year. Getting goods and people safely to their destinations is at the heart of our economy.

Data has revealed that by promoting safer driving practices, the Hollard Highway Heroes competition has led to a substantial improvement in participating drivers' road behaviour since the inception of the competition.

Better driving cuts risk and reduces road-accident claims and fatalities and leads to safer roads. Hollard Trucking's successful Driver Rewards Card Programme also ties in with Hollard Highway Heroes to encourage good driving outside the competition.

It pays out twice-monthly cash rewards that can add up to hundreds of rands to monitored drivers, simply for driving well. Having paid out more than R1.4-million in prize money to date, Hollard Highway Heroes aims to create public awareness around road safety and appreciation for those drivers who do their jobs with care and consideration under often difficult circumstances.

The 2023 competition

This year's competition, supported by Clarendon Transport Underwriting Managers (CTU) and Ctrack, is open to drivers from all truck and bus fleets in South Africa.

Truck drivers will compete in five categories: tankers, tippers, tautliners, reefers and flatdeck trucks. There will be two categories for bus drivers: long-distance and short distance.

Entries opened on 1 March and will

remain open until 31 May. After the closing date the competition kicks off and, using telematics, the competitors will be tracked for speeding, excessive driving and total distance travelled.

After the first monitoring phase, which will end on 31 July, 50 truck drivers and 20 bus drivers will progress to the second assessment phase which will take place from 1 September to 15 October.

Finalist vehicles will be fitted with the same type of tracker to ensure a level playing field, and their driving will be rigorously monitored by Hollard Trucking's Risk Services Bureau. The winners will be announced at Emperors Palace, Ekurhuleni, on 17 November.

"The Hollard Highway Heroes competition has led to a big improvement in participating drivers' road behaviour. Better driving, in turn, reduces risk and leads to safer roads. It also means lower fuel and maintenance costs, and fewer claims," says Paul Dangerfield, Hollard Trucking National Operations Manager.

There were an estimated 12 545 road fatalities in 2021. The scale of this year's competition could well mean a drop in this number.

For the first time this year, Hollard Highway Heroes is open to drivers of all truck and bus fleets – not only those affiliated with Hollard.

"By including bus drivers in the competition, we want to have a greater positive influence on enhancing road safety in South Africa. But the broader mission is to go beyond trucking and buses to cut risk and reduce road-accident

We're deeply invested in entrenching safe driving practices, and creating shared value by making South Africa's roads safer for all road users – whether you're a fleet owner, broker, driver, community member, or one of our sponsor partners in this initiative.

claims and tragic loss of life," says Dangerfield.

"We're deeply invested in entrenching safe driving practices, and creating shared value by making South Africa's roads safer for all road users – whether you're a fleet owner, broker, driver, community member, or one of our sponsor partners in this initiative. Our message is: we are where you are!" he adds.

Dangerfield believes that good drivers help to create better futures for all road users by delivering their cargo and passengers safely and responsibly.

Rewards for safety

The reason the competition has been such a success is the fact that there are cash rewards for top drivers that enter the competition, and the 2023 prize pool is nothing to sneer at.

In the trucking category, the five overall category winners will win R50 000 each.

The overall winner will walk away with R150 000.

In the bus category, there is R100 000 at stake for the overall winning bus driver.

By promoting driving excellence, the competition offers life-changing opportunities for drivers and their families. As an add-on effect fleet owners benefit from fewer accidents and lower maintenance and running costs.

According to Hollard, the goal is to create shared value by making South Africa's highways safer for all road users. 🌱

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THE LADYSMITH DUNLOP FACTORY IS TURNING 50

Sumitomo Rubber South Africa (SRSA) continuously keeps its Dunlop tyre plant in Ladysmith up-to-date. The factory celebrates its 50th anniversary this year, and the company is planning several exciting investments that will allow the facility to increase local manufacturing capabilities, expand product lines and create new jobs.



"These investments allow us to increase production and meet the needs of the tyre market in the region, especially during the second half of our plant's five decades of operation."

Lubin Ozoux, Chief Executive Officer,
SRSA

The Dunlop Ladysmith's manufacturing facility first opened in October 1973 and has been at the forefront of South African tyre production ever since.

"The 50th anniversary of our Dunlop Ladysmith manufacturing facility is an exciting time for us as we seek to build on this impressive history and create a better future for the region," says Lubin Ozoux, SRSA Chief Executive Officer.

"We want to increase our contribution to job creation in South Africa over the coming years and months. We will therefore invest in machinery and systems to ensure we can meet OEM requirements locally and increase efficiency to better serve the local area market and provide a better and safer driving experience," he adds.

The new investment offensive follows

an earlier expansion phase of the facility. In 2018, SRSA officially opened a new, 180,000-square-foot, state-of-the-art Truck and Bus Radial (TBR) facility at the facility, facilitating local manufacturing of previously imported truck and bus tires.

This required an investment of more than R2.1 billion and marks the second phase of SRSA's multi-billion rand investment to upgrade and modernise the Dunlop plant's capacity.

SRSA also previously upgraded the plant's production capacity for passenger car, off-road vehicle (SUV) and light truck tires.

"These investments allow us to increase production and meet the needs of the tyre market in the region, especially during the second half of our plant's five decades of operation," says Ozoux.

As the manufacturer of brands like Dunlop, Sumitomo and Falken, SRSA is committed to delivering the latest and greatest breakthrough tyre innovations.

Rigorous manufacturing processes ensure that Dunlop not only meets but exceeds global standards. SRSA builds on the technical design expertise of its Japanese parent company, Sumitomo Rubber Industries, through continuous

research and development, which is incorporated into product designs to enhance the performance, safety, and durability of Dunlop tyres.

In 2013, SRI, a Kobe, Japan-based market-leading Japanese listed global manufacturer of premium automotive tyres and industrial rubber, acquired the rights to use the Dunlop brand throughout the African continent.

"As a resident tyre manufacturer associated with a global multinational organisation and a proud member of the South African Tyre Manufacturers Congress (SATMC), we look forward to an exciting future in South Africa and a renewed commitment to our customers of world-class products. The planned investment in the Dunlop Ladysmith manufacturing facility will not only increase capacity but will also create more jobs and have a positive impact on the local community. We believe the future is bright and we are proud to continue as a worthy, and trusted brand for quality, reliability and safety on the road," says Ozoux.

Keeping it local

As a member of SATMC, SRSA forms part

We are collaborating with the Tyre Importers Association of South Africa (TIASA) and the Tyre Equipment Parts Association (TEPA) as well as the government to ensure steps are taken to drive improvements and sustainability in the collection and processing of tyre waste.

QUICK TAKE

New investments include machinery and systems to ensure the facility can meet OEM requirements locally and increase efficiency



It marks the second phase of SRSA's multi-billion rand investment to upgrade and modernise the Dunlop plant's capacity



SRSA opened a 180,000-square-foot, state-of-the-art Truck and Bus Radial (TBR) facility in 2018



Ozoux was recently appointed as the chairperson for SATMC, which is also working on plans to localise tyre manufacturing and create a circular economy for tyres manufactured in South Africa



of a group that sells locally produced tyres. SATMC estimates that 70% of tyres sold in South Africa are not only made locally but also have the branding of one of the four members.

Ozoux was recently appointed as the chairperson for SATMC and in this role he is undertaking ways forward to address waste tyres in a responsible manner.

According to him, all members are committed to finalising the industry waste management plan for tyres in 2023. This will provide a clear roadmap to reduce carbon emissions in the sector.

"We are collaborating with the Tyre Importers Association of South Africa (TIASA) and the Tyre Equipment Parts Association (TEPA) as well as the government to ensure steps are taken to drive improvements and sustainability in the collection and processing of tyre waste," mentions Ozoux.

To make this a reality they are working with tyre dealers to encourage the correct storage of waste tyres while exploring the commercial prospects of waste tyres. A goal is to develop a circular economy with a focus on job creation.

The industry has been advocating for the processing of end-of-life tyres, and to get these tyres off the road and not available for reselling. 🌱

BRIDGING THE GAP BETWEEN EQUIPMENT, EDUCATION, AND EMPLOYMENT

With John Deere, it's about much more than just hard metal



John Deere AME's Construction, Mining and Quarrying division has announced its intention to invest in industry-standard training programmes for machine operators. The company believes operator training is essential when machinery of high calibre is sold into the market, and this explains the robust focus it is placing on developing this qualification. The programme aims to provide trainees with the necessary tools and education to become trainers in the industry.

Though still in its early stages, John Deere trusts the programme will serve as testament to its dedication to the industry, to servicing its customers, and to providing opportunities to those people who might not otherwise have them.

The John Deere Construction Journey

The John Deere Yellow Equipment range is known throughout the industry for its exceptional quality and reliability, making it the go-to choice for companies in construction, mining, quarrying and related industries.

From the onset, John Deere Construction has demonstrated its commitment to keep growing and achieving more for its equipment, customers, employees, dealer network, and the difference it wishes to make across the continent.

1. Expanding the John Deere Construction Brand into Africa

Announced in March 2021, John Deere Construction entered the African Market, where Deere-branded construction products were previously unavailable. Press Release - March 2021

2. Expanding product offering

In September 2021, John Deere Construction made its first step towards expansion by introducing nine additional machines to its line-up. Press Release - September 2021

3. Advancing further with technology

JDLink™ is a free, subscription-based, John Deere telematics system that allows owners and managers to remotely connect to their machinery to help monitor

and track operations and productivity in real-time. It provides them with vital information, such as machine location, fuel consumption and machine health.

The system allows for machine monitoring, including performance, and identifies issues before they become major problems. This allows customers to manage their fleets more efficiently by scheduling maintenance and repairs from the app.

4. John Deere Financial extends portfolio offering

In March 2022, John Deere Financial announced that it had extended its offering to include John Deere Construction, Mining and Quarrying machines in its portfolio. Press Release - March 2022

5. Growing bigger and Better

In July 2022, John Deere AME launched the 460E-II Articulated Dump Truck, the first one to touch Southern African soil, and it was put on display for customers to see and touch. Press Release - July 2022

6. Investing in our people

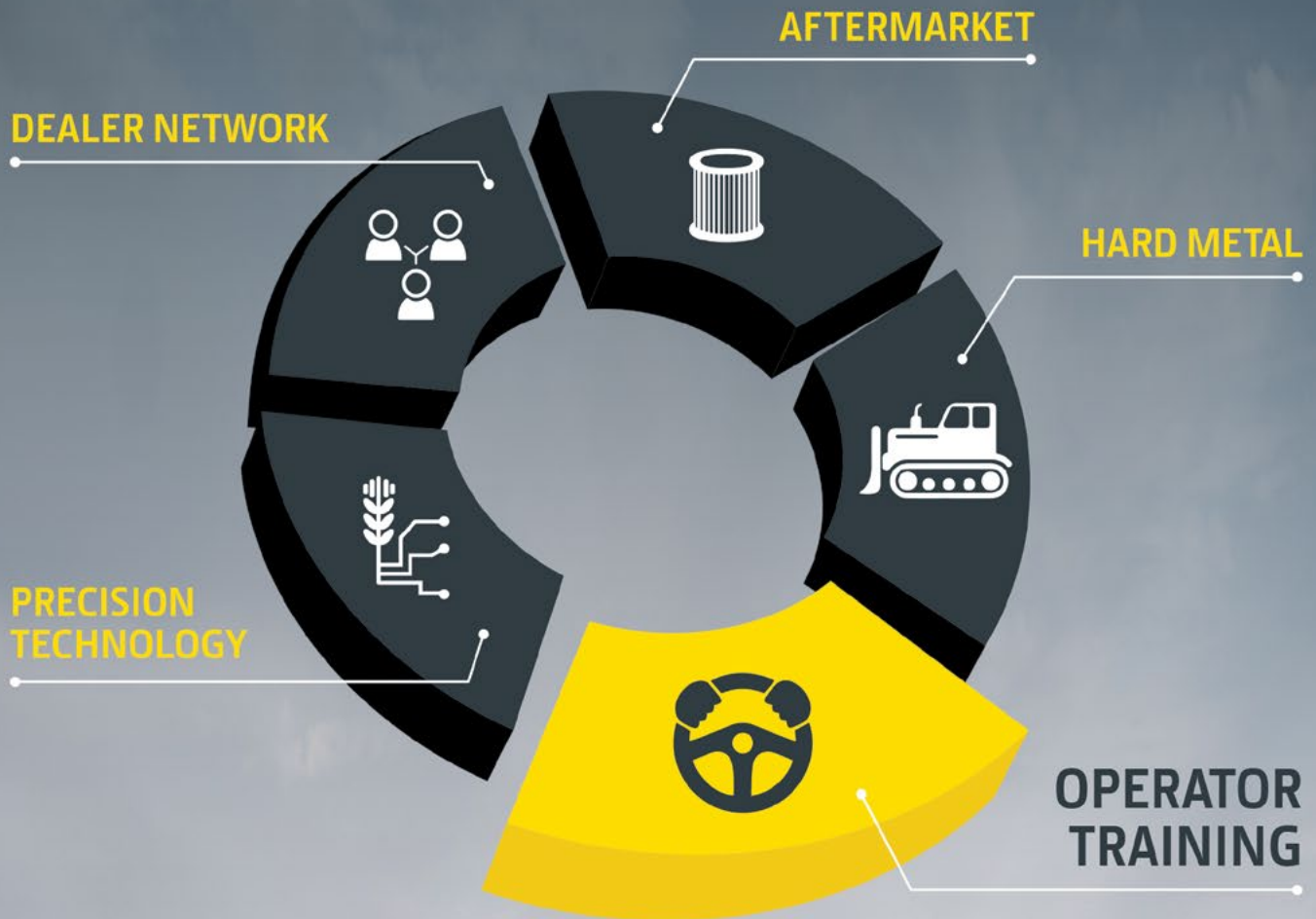
Now, John Deere is taking its commitment even further with the development of a new programme, providing operator training to the industry and to passionate members of local communities who may need direction in creating a path along which they can build a career.

Working with expert trainer Paul Sethusa, who has over 29 years of experience in the industry, John Deere, in partnership with its dedicated Dealer Network, provides a free six-month programme that bridges the gap between school and the work market. The programme provides theoretical and in-field training, followed by on-the-job experience with a dedicated John Deere Dealer.

John Deere is committed to the industry and will continue to grow, to invest in, and to build Africa. 🌱

Investing in Africa; It's About More Than Just Hard Metal with John Deere.

WE MAKE **YOUR SUCCESS,** **OUR BUSINESS.**



JOHN DEERE

Volvo Penta and Gradall collaborated on an electric excavator concept that was unveiled in March. The powerful excavator ticks all the boxes for a heavy-duty machine, while also ticking the boxes for electromobility.



A NEW ELECTRIC EXCAVATOR CONCEPT THANKS TO A COLLABORATION

Volvo Penta and Gradall collaborated on a new electric excavator concept. The electrified concept model of its multipurpose, highway-speed wheeled excavator, powered by Volvo Penta's electric driveline signifies the strength and evolution of the two companies' long-standing partnership, as well as Volvo Penta's ability to act as a full system supplier of the latest electromobility technology.

Volvo Penta and the leading North American telescopic boom excavator manufacturer Gradall Industries showcased the latest development in their partnership, an electrified version of the OEM's XL 4100 V highway speed wheeled excavator. The excavator is a zero-emissions concept machine, named EL41H4.

The partnership between Volvo Penta and Gradall began in 2014 when Volvo Penta became the exclusive supplier of 5

and 8-litre Tier 4 Final engines for Gradall's diesel-powered telescopic boom excavators. After nearly a decade, the partnership made Volvo Penta the obvious choice for Gradall's first step into electromobility.

"We were looking for a major power solutions provider with a good track record to partner with," says Mike Popovich, President of Gradall.

"We see Volvo Penta as a power partner rather than an engine supplier – this is a turnkey solution to them. We didn't want

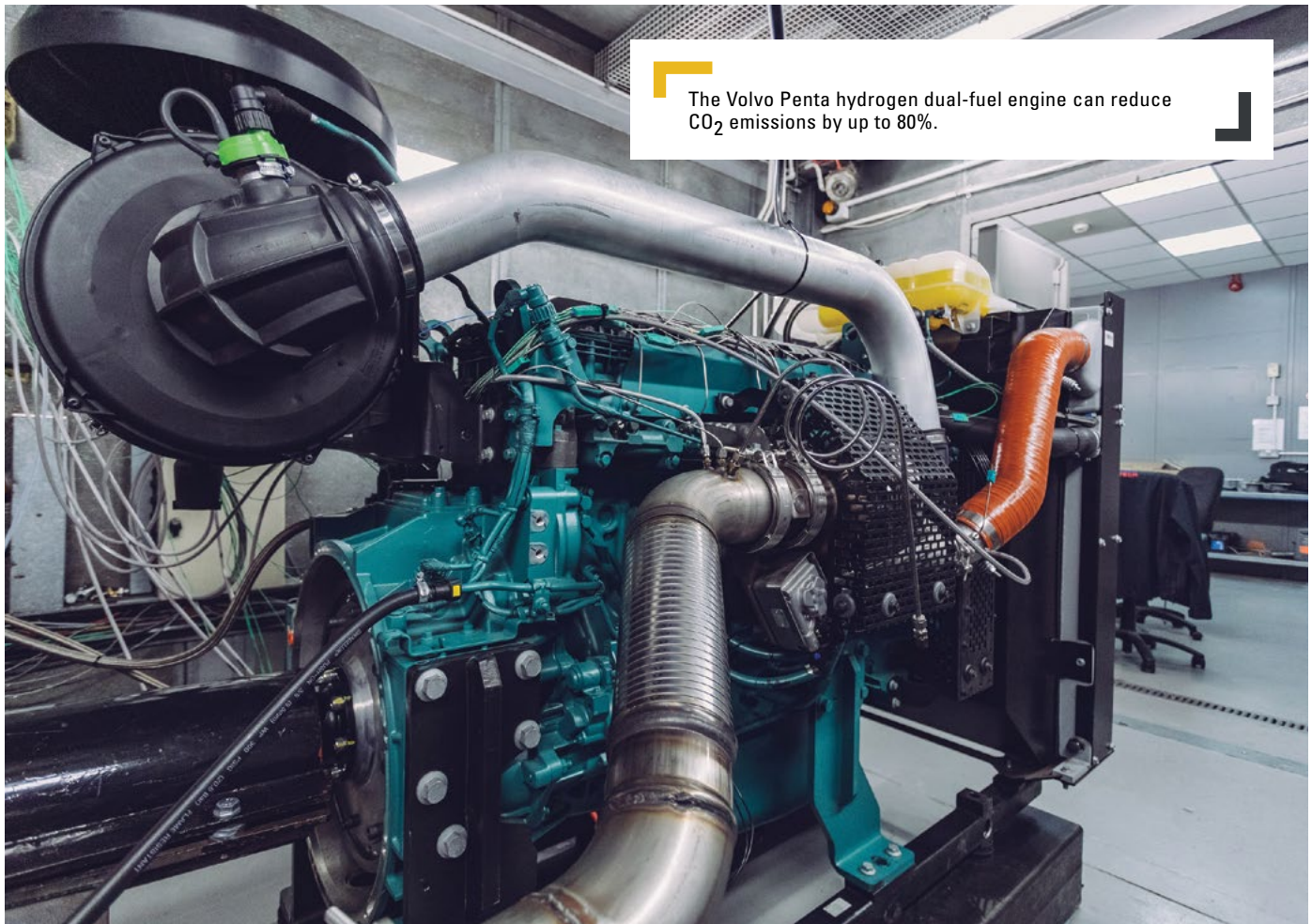
to be in a situation where we were mixing and matching from 10 different suppliers and trying to make it all work seamlessly. Volvo Penta's full systems approach and expertise, together with proven Volvo Group technology, was the ideal solution for us. This is a natural progression of our existing partnership towards where we're both heading in the future," he adds.

Well matched

With growing interest from Gradall's municipality customers for quieter, cleaner solutions that meet intensifying sustainability demands and regulations, collaborative discussions between Gradall and Volvo Penta began last year.

"Expanding our partnership with Gradall into electromobility is an exciting development for us," says Hannes Norrgren, President of Volvo Penta's Industrial Business Unit.

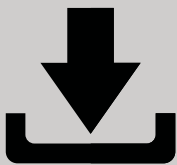
"This is our first electrification project



The Volvo Penta hydrogen dual-fuel engine can reduce CO₂ emissions by up to 80%.



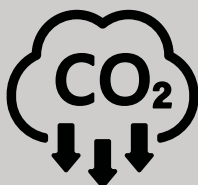
Gradall announced that the EL41H4 is the first electrification project in a construction application



The EL41H4 does not require a low loader for transport



The Volvo Group is investing in battery cell and pack manufacturing around the world to secure capacity and large-scale series production



Hydrogen is a renewable fuel source and reduces CO₂ emissions by up to 80%

QUICK

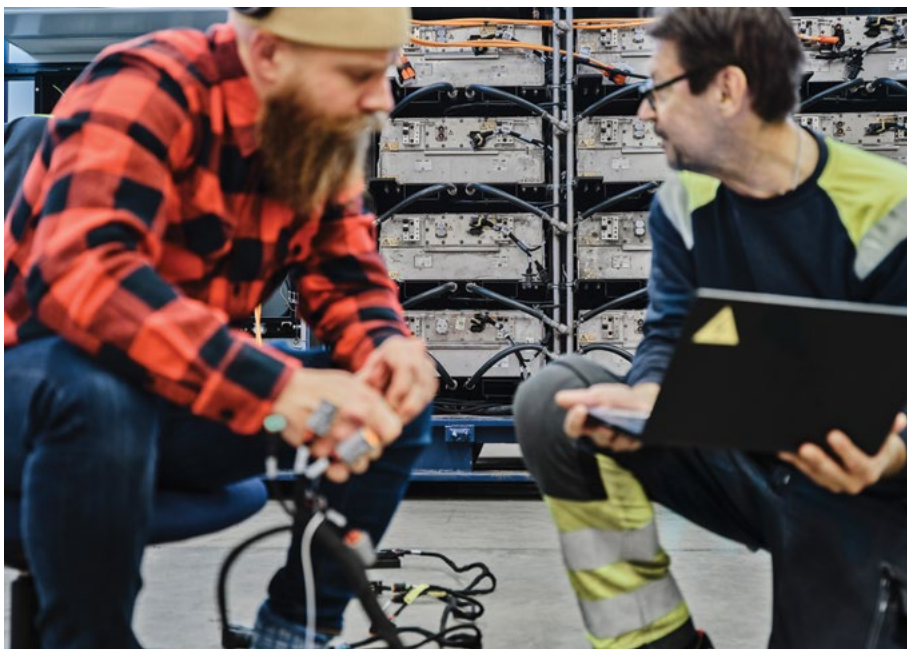
TAKE

We see Volvo Penta as a power partner rather than an engine supplier – this is a turnkey solution to them. We didn't want to be in a situation where we were mixing and matching from 10 different suppliers and trying to make it all work seamlessly.

in a construction application, representing another milestone in Volvo Penta's electromobility journey and aligning with our sustainability ambitions."

Mega excavator

Unlike a traditional hydraulic excavator, Gradall's highway speed solution features a telescopic boom mounted next to a



The Volvo-Penta expansion into battery-energy storage with OEMs allows sustainable goals to be even more reachable.

separate cab sitting to the rear of a road-going chassis that allows the machine to be independently dispatched to many locations throughout the work day, rather than requiring a low loader for transport.

With a hydraulic system powered by a Volvo Penta-supplied electric machine power take-off (EM PTO), this concept machine can effectively use battery power to transport its own excavator. The system will deliver 94 kWh of energy, and with the increased likelihood of the EL41H4 operator returning to the yard between jobs or for lunch, the potential is high for opportunity charging or reaching full capacity in under 45 minutes from a 150kW charger.

The unique highway speed design – and its suitability for work in environments where knuckle boom models may not be the ideal fit for operation, such as under overhead obstructions like power lines – means the concept has huge potential for application to other designs in the Gradall portfolio. Currently, the EL41H4 is still a concept machine and further testing and development is required before the next steps can be decided.

Stronger Together

“At Volvo Penta, we partner with our customers and collaborate to optimise the design and adapt the complete electric

driveline system for a specific vehicle, allowing us to deliver a tailored solution based on their exact usage requirements,” concludes Fredrik Högberg, President of Volvo Penta North America.

“We are on hand and provide technical expertise throughout the entire design and development stages, so our collaboration with Gradall is still very much ongoing – it’s a true partnership.”

Even more sustainability

The new excavator isn’t the only electromobility solutions from Volvo Penta. In 2023, the company is dead-set on unveiling more effective solutions in the race to net-zero around the world.

Volvo Penta is now expanding its power generation business into battery energy storage systems (BESS) with OEMs. Volvo Penta’s modular and scalable solution is intended for integration into manufacturers’ BESS applications to accelerate market entry. This represents a step towards the company’s road to net-zero ambitions.

In a strategic move to supplement its power generation business and tap into new segments, Volvo Penta is launching a new offer – a high-performance subsystem based on the Volvo Group’s electromobility platform, optimised for OEMs’ BESS applications.

“Battery energy storage is increasingly in demand for a variety of applications including utilities, factories, decentralised microgrids and mobile charging stations,” says Norrgren.

“As our solution is application agnostic, we see huge potential for its adoption. Together with OEMs, our solution provides possibilities to store energy from and add resiliency to renewable solar or wind-powered sources, opening new business models that appeal to end customers on their road to net-zero emissions.”

Energy efficient

Volvo Penta’s modular and scalable BESS subsystem is a high-energy-density and high-power battery system, and it ensures quick and substantial charge and discharge, in response to sudden demand. These battery systems are energy and power-optimized to meet business and operational needs. From just one, to as many units as are required for the OEM’s BESS applications, Volvo Penta’s solution is scalable up to hundreds of mega-watt hours (MWh) in energy.

“BESS will enable highly flexible energy solutions, making low to no emissions a far more viable proposition for mobile and stationary use,” adds Norrgren.

“We’re starting by introducing the



both the current demands to reduce emissions and the future business needs, of construction and mining customers. The company's growing foothold as an electromobility systems supplier is the catalyst to the next-stage collaborative partnership with Gradall. The electrified concept model of its multipurpose, highway-speed wheeled excavator, powered by Volvo Penta's electric driveline is a testament to the use and application of new technology.

At the 2023 CONEXPO in Las Vegas, Volvo Penta showcased its electric driveline alongside its current portfolio of efficient Tier 4 Final combustion engines – the D5, D8, D13 and D16.

The electric driveline leverages proven technologies from the Volvo Group and are strengthened by Volvo Penta's deep and varied application knowledge in off-highway power solutions. This results in solutions that are built to handle the tough conditions that are found in the construction and mining industries.

Since 2016, Volvo Penta's industrial engines can run on renewable diesel (HVO), enabling a lower-emissions power option. Further supporting customers who are looking to transition to low-carbon solutions, is Volvo Penta's dual-fuel hydrogen engine – an evolution of the company's proven D8 model.

The engine mainly uses hydrogen as a renewable fuel source and reduces CO₂ emissions by up to 80%, without impacting power or performance. Volvo Penta will continue to evolve its engine range to run on compatible alternative fuels, enabling the transition towards lower emissions. 🌱

solution to customers in North America and Europe, followed by other markets, and are eager to begin collaborating with OEMs to kickstart new projects in BESS."

Heavy-duty at heart

Volvo Penta's offer is built on the Volvo Group's electromobility platform which has seen real-world success in applications such as trucks, buses, and construction equipment. In parallel, the Volvo Group is also investing in battery cell and pack manufacturing around the world to secure capacity and large-scale series production.

The Volvo Penta BESS offer demonstrates high-power output from an energy-dense and small footprint. With its origins in heavy-duty design, and being optimised for tough

environmental conditions, the battery system is an excellent option for BESS applications.

"Volvo Penta's engineering expertise, together with knowledge from the Volvo Group, will be key in guiding our OEMs in developing a battery energy storage solution to meet new segment and application needs as we jointly navigate this energy transition," says Heléne Mellquist, CEO of Volvo Penta.

"The company has taken an exciting next step in its journey to visualising and realising an ecosystem of road-to-net-zero solutions that not only strengthen our power generation business but go well beyond into new segments."

Embracing new technology

Volvo Penta is presenting technologies and service offerings that will support



Essential diesel spares for heavy machinery.

Bosch Off-Highway

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Invented for life



THE TIP OF THE EXCAVATOR

Excavators for high productivity and long service life in tough conditions are the dream. And with the correct attachment buckets, the latest Doosan DX450LCA-7M and DX450LC-7M crawler excavators show how long that potential lifespan can be.

The combination of high power ratings for greater productivity and a robust structure for dependable performance puts the Doosan DX450LCA-7M and DX450LC-7M crawler excavators in another league. Noted for stability on-site and long service life the crawler excavators are valuable machines on any tough construction site and in mining, quarrying and civil engineering.

A tough foundation

"These robust excavators have been developed for improved performance, efficient operating costs and minimal downtime in arduous conditions. Doosan's new generation of machines boasts an impressive combination of power and intelligence, which means operators can handle heavy loads and challenging tasks



"Buckets are now available as application specific directly from the factory, the need for local modification has been almost done away with."

Darrel Holton, managing director, DISA Equipment Limited



Doosan's new generation of machines boasts an impressive combination of power and intelligence, which means operators can handle heavy loads and challenging tasks with ease.

with ease," says Darrel Holton, managing director, DISA Equipment Limited, trading as Doosan, part of Invicta Holdings Limited.

"All features of this series have been optimised for a greater working range and fast digging speeds required for high performance in tough applications."

This bodes well in South Africa, due to the local climate and conditions that are varied.

"The DX450LCA-7M excavators, with an operating weight of 44.3 tons and DX450LC-7M machines, with an operating weight of 44.4 tons, can operate efficiently with attachments designed for 50-ton excavators, with sufficient pump flow and lifting capacity."

Doosan's new DX12 engine, with outputs of 181 kW and impressive torque, delivers the precise power needed for each specific task. A rotor-type pre-cleaner ensures efficient filtering in dusty environments, which increases maintenance intervals, resulting in more uptime.

In addition, a filter-type water separator filters moisture in the fuel, which reduces impurities and enhances engine efficiency. A standard auto-idle feature reduces engine rpm when the steering wheel or joystick isn't being used and automatically puts the engine and pump into standby mode when it detects a pause. This function helps reduce fuel consumption and minimises noise. Notably, the noise levels of this series comply with environmental regulations.

In addition, the e-EPOS system (Electronic Power Optimising System) ensures economy and smooth operation, by providing a synchronised communication link between the engine's electronic control unit and the hydraulic system, to ensure power is delivered exactly as required.

QUICK TAKE

The DX450LC-7M and DX450LCA-7M excavators have a newly designed reinforced heavy-duty arm and boom, with an optional boom floating system



The H-class bucket, which is manufactured from high-strength steel, has been upgraded with a larger abrasion-resistant plate and a new heel and edge saver



Buckets are available from 1.5m³ full mining orientated Rock buckets to 2.4m³ General Purpose buckets



The excavators can operate efficiently with attachments designed for 50-ton excavators, with sufficient pump flow and lifting capacity





Pump matching technology improves fuel efficiency and reduces exhaust fumes.

Bigger bucket load

Advanced features of this series include greater digging force and 20% more bucket load than other machines in the same class. DX450LC-7M and DX450LCA-7M excavators also have a newly designed reinforced heavy-duty arm and boom, with an optional boom floating system. For improved protection of the base arm, reinforced bars have been added and the arm centre and end boss have been strengthened.

The heavy-duty X-shaped undercarriage has an integrated track spring and idler, a durable box section track frame and self-lubricating sealed links. All welded structures are designed to limit stresses. The sprocket and tooth structure have been strengthened to prevent debris and increase durability, while the hydraulic track adjuster has a highly-effective shock-absorbing tension mechanism.

An axial piston motor with a two-stage planetary reduction gear ensures high swing torque and reduced swing speed (between 0 and 9.1 rpm). The swing brake for parking is activated by a spring and released hydraulically.

The H-class bucket, which is manufactured from high-strength steel,

has been upgraded with a larger abrasion-resistant plate and a new heel and edge saver, which significantly increases the durability of the bucket.

The re-designed cabin, which features the latest aesthetics, focuses on operator safety and comfort, in combination with advanced technology to ensure precise control during all tasks.

Doosan machines ensure easy access to all components for quick maintenance procedures and to prevent contamination of the surrounding environment.

"Buckets are available from 1.5m³ full mining orientated Rock buckets to 2.4m³ General Purpose buckets. There are various heavy-duty options available in between," according to Holton.

He advises that buckets need to be carefully matched to the application to ensure optimal fuel efficiency and to maximise production cycle times.

"Buckets are now available as application specific directly from the factory, the need for local modification has been almost done away with," he adds.

This allows crawler excavators to be ready for the job upon receiving it, doing away with some lengthy waiting periods.

New Telematics

Doosan recently launched advanced telematics and tracking technology, DoosanCONNECT. It is designed to make

All features of this series have been optimised for a greater working range and fast digging speeds required for high performance in tough applications.

equipment and job sites more efficient, economical and convenient.

A telematics terminal, which is simply connected to the machine, is enhanced by a dual-mode cellular or satellite communication system and the DoosanCONNECT web service, which allows users to monitor a machine's status.

To enhance work efficiency management, this system monitors operational trends, including the machine's operating hours and actual work hours, as well as the provision of information on the current fuel status and accumulated mileage.

Filter and oil management forms part of DoosanCONNECT's preventative maintenance, by monitoring item replacement cycles. Alarms are set for replacing consumables like filters and oils. The proactive service of this system encompasses automatic gauge monitoring, alerts in the event of an antenna disconnection, alarms for equipment malfunction symptoms, as well as geo/time fence alerts.

For job site management, functions for the monitoring of equipment location information include GPS and geo-fence location and periodic operation and utilisation reports.

Doosan offers technical advisory, repair, maintenance and spare parts service, through a national network of branches and carefully selected distributors.

Doosan construction equipment - which encompasses track, wheel and mini excavators, articulated dump trucks (ADTs), as well as wheel loaders and various attachments - has been designed to cope efficiently and safely in Africa. 🌍

THREE THINGS SMEs IN CONSTRUCTION NEED TO CONSIDER

Small businesses are essential to the South African economy, employing some 80% of the country's workforce. The role of small and medium enterprises (SMEs), in the construction industry especially, cannot be overstated. They act as key suppliers, contractors on independent projects, and sub-contractors supporting larger projects and construction companies.

By Roelof van den Berg, CEO of the Gap Infrastructure Corporation

Arising tide lifts all boats. The construction industry as a whole benefits from a stronger SME presence, which provides a competitive alternative to national and multi-national companies. Additionally, these businesses play a crucial role in creating job opportunities for unskilled and lower-skilled workers, stimulating economic development and growth.

Small, local suppliers are often more flexible and accommodating to the client's needs. Additionally, sub-contractors may offer the expertise needed to manage specialised segments of a project which could otherwise distract the main contractor's teams from their core duties.

However, the growth of SMEs is often dependent on factors such as their ability to continuously improve their internal operations, appoint competent team members, and shore up their finances. And to succeed and thrive, small businesses may also require support from larger, more established construction companies.

There are three key areas that require increased attention in order to further stimulate the growth of SMEs in South Africa's construction sector.

1. Increased utilisation of technology

Numerous construction SMEs face a common problem: disorganisation. SMEs often overlook key internal structures and strategies required to streamline processes, minimise material and financial wastage, and ensure that budgets and deadlines are met.

The solution is simple. By integrating easy-to-use digital technology into day-to-day operations, contractors can plan out and prioritise tasks, better manage individual employees, track material usage, and ensure that every team member remains fully informed.

Large contractors rely heavily on various design, planning, and management

software, as well as smart wearable technology. Construction SMEs, on the other hand, have been slow to adopt technology, which results in a marked mismatch of approaches between contractors and sub-contractors onsite.

Something as simple as a free cloud-based scheduling programme or budgeting and accounting software can vastly improve an SME's productivity, lower time losses and material wastage, and improve profitability in the long run.

2. Enhanced financial management

The importance of accounting is regularly overlooked or undervalued in small businesses, especially among those that are new to the trade. However, without a clear record of the flow of capital and exactly where money is coming from or going, it is difficult to determine how much spending power the company has, what budget constraints exist, and whether the business is profitable.

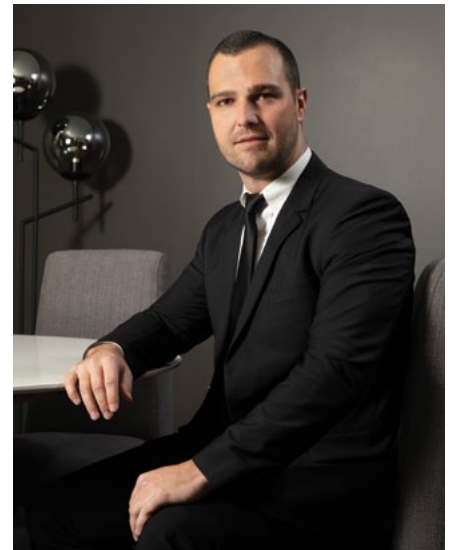
Stringent accounting and bookkeeping practices are essential to keeping track of material costs, inventory levels, debt obligations, taxes, savings, wasteful spending, and how much the business can afford to reinvest and where.

Many major players in the construction industry started small. But through leveraging the benefits of enhanced accounting bookkeeping practises, they became increasingly competitive and financially stable enough to take on multi-million-rand projects.

3. Sustained emphasis on drawing SMEs into supply chains

Smaller contractors and suppliers largely rely on sustained business from larger corporations for new projects and growth.

The best way to stimulate small business growth is therefore for larger businesses to commit to purchasing material from smaller, local suppliers; outsourcing time-intensive



tasks to sub-contractors, and opting to use small sub-contractors over national construction companies.

The way companies work with small businesses after they have been appointed is also vital to the success of both businesses and projects. Because many SMEs are still learning the ways of the trade, it is usually mutually beneficial to provide training and give business advice throughout the duration of the project.

Lastly, do not defer payments. Small businesses rely on every cent that comes in and often doesn't have the required reserves to wait a couple of months for payments to go through. Making payments early enough will permit small business partners to pay their employees, rent necessary equipment, buy materials, and pay for marketing.

Through industrywide cooperation and increased efforts from SMEs to improve their internal operations, the construction industry will gain valuable new participants, construction projects will see better results and employment rates and income levels will see considerable improvement. 🌱

For working at heights the NLR 150 Challenger 1204 Aerial Working Platform is available as a Ready to Work solution.



HOW ISUZU IS CHANGING THE TRUCK LANDSCAPE

Isuzu Truck has a good story to tell. In 2022 Isuzu set a record for heavy commercial vehicles sold, and they don't expect it to slow down. On top of that EV trucks have come to dominate short, medium and long-term plans as more electric, or dual-powered vehicles are released by the OEM. In South Africa, there's also keen interest in the needs of small and medium businesses. Isuzu has launched clever ways for businesses to have access to the truck of their choice.



"With such high demand for ISUZU products, it's been our top priority to maintain a steady supply of ISUZU trucks while delivering excellent customer service and after-sales support."

Craig Uren, Senior Vice President,
Revenue Generation at ISUZU

ISUZU's ESG commitment is looking forward to the products they deliver, and it starts with a keen interest to improve EURO standards locally.

South Africa is behind when it comes to EURO Standard trucks on our roads, and to address this Isuzu is rolling out more EURO 5 standard models.

Previously selected N-Series and F-Series trucks were available with EURO 5 standards, now even more models will be available with this checkbox.

In the short term, under ISUZU Truck, the company will release more dual-fuel models locally, as well as CNG options in selected models. Expanding the EURO 5 portfolio of vehicles is however one of the major short-term goals.

According to Craig Uren, Senior Vice President, Revenue Generation at ISUZU, current and future plans support the reduction of carbon emissions.

With that in mind some medium terms ESG goals will be releasing Battery Electric vehicles (on selected models).

Keeping in mind that these vehicles use less fuel the option will save overall operation costs and make these vehicles especially suited for business needs in South Africa.

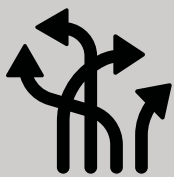
Isuzu's long-term goal is to introduce Hydrogen-Electric vehicles. These power



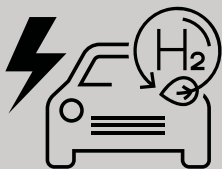
The FSR 800 SWB 5m³ Tipper, also available as a Ready to Work option.



Under EasyGO Isuzu will also roll out their alternative propulsion solutions which initially will be via our Compressed Natural Gas N-Series truck



The South African truck market including van and bus recorded total sales of 30,153 units for the 2022 calendar year, an increase of 11.4% overall on 2021 numbers, with ISUZU's growth at 4.7%



Isuzu's long-term goal is to introduce Hydrogen-Electric vehicles. These power trucks are considered some of the most sustainable fleet solutions



The ISUZU Truck Rental Programme allows customers to go through a different credit checking process that focuses on a business's contracts and revenue streams

trucks are considered some of the most sustainable fleet solutions.

"We have several reasons to celebrate when ringing in the new year, with such an excellent sales record, the amazing hard work of everyone in the ISUZU Dealer Network, and the team members who power the ISUZU products and stand by them day in day out," says Uren.

A record-breaking year

The South African truck market including van and bus recorded total sales of 30,153 units for the 2022 calendar year, an increase of 11.4% overall on 2021 numbers, with ISUZU's growth at 4.7%.

ISUZU achieved a total sale of 3 304 units of the total market, excluding vans and buses – a record performance for the brand which smashed the previous year's total by an increase of 4.76%.

The Medium Commercial Vehicle market increased by 17.8%. ISUZU sales in this category increased by +10.12% compared to 2021

The Heavy Commercial Vehicle market increased by 19.6%. ISUZU sales in this category increased by 0.24% compared to 2021

On achieving 10 consecutive years of market leadership, Uren said, "Our growth can be attributed to the relentless hard work of the greater ISUZU team,

The ISUZU FVZ 1600 AT Hyva RC1720 Compactor, available as a Ready to Work model.



the backbone of which is our Dealer Network and their relationships with our Customers."

Market leadership

Challenges such as global and domestic supply chain issues impacted many sectors of the South African economy in 2022. However, this did not stop the strong market demand, which helped drive ISUZU truck sales.

"I have been working closely with our Dealer Network over the past years and it's fantastic to see ISUZU chalk up another stellar sales performance off the back of this determined effort," says Uren.

"With such high demand for ISUZU products, it's been our top priority to maintain a steady supply of ISUZU trucks while delivering excellent customer service and after-sales support," he adds.

ISUZU's 2022 market success is propelling the brand to continue building capacity and capability to meet and exceed its Customers' and the industry's needs.

"We understand that the South African Customers deserve the best, which is what ISUZU delivers year in, year out," adds Uren.

Including small and medium businesses

One of the major aspects ISUZU is focusing on includes EasyGO, a new way for businesses to have access to ISUZU vehicles without downright ownership. As a cost-effective alternative, it is proving to be a great way for more ISUZU vehicles to be on the road.

"EasyGO is a novel funding approach to commercial vehicle acquisition for, especially, first-time entrants into the trucking space," says Ugen.

Under EasyGO Isuzu will also roll out their alternative propulsion solutions which initially will be via our Compressed Natural Gas N-Series truck, closely followed by Dual Fuel solutions.

"ISUZU is the first OEM in South Africa to offer an off-balance sheet solution for Customers to rent a truck, rather than owning it. We identified this need as many Small to Medium businesses would not qualify for traditional finance based on an evaluation of their assets and liabilities. EasyGO focuses on the business's revenue streams and contracts, rather than on its assets and liabilities," says Ugen.

EasyGO works hand-in-hand with another solution called Ready to Work.

The ISUZU Ready To Work truck program provides an off-the-shelf pre-built truck solution. "The time saved because the vehicle does not have to go to a body builder can be anything from 60-180 days, depending on the configuration. This allows a business to start generating revenue almost immediately – a key win in the trucking space," adds Ugen.

The rental truck programme could see qualifying small businesses pay a monthly rental based on the selected track, application and period of the rental. Businesses can choose between a minimum of 36 months and a maximum of 60 months.

"Falling outside of the National Credit Act, this is an option that really has the customer in mind. Small businesses seldom have the capital outlay to buy and own assets like trucks, so this allows them to focus on their business instead of worrying about how to purchase a truck," says Marcois van Staden, head of ISUZU Finance.

The ISUZU Truck Rental Programme allows customers to go through a different credit checking process that focuses on a business's contracts and revenue streams.

Applications to the ISUZU Truck Rental Programme are subject to qualification.

The success

Isuzu Trucks have become a true symbol of sustainability and success in South Africa. The quality and reliability of these trucks have attracted many customers. With the latest models offering improved safety, fuel efficiency and increased carrying capacity, Isuzu Trucks are helping to drive the economy forward.

The Isuzu Truck range has quickly become one of the leading choices for businesses in South Africa. From the light-duty engine models to the heavy-duty units, all trucks offer an impressive combination of performance and value. The vehicles are backed by a comprehensive 3-year warranty and provide added peace of mind for buyers.

The company's commitment to sustainability has also been a key factor in the success of ISUZU trucks in South Africa. Their focus on creating more efficient, powerful and durable vehicles means that they meet the increasingly stringent emissions standards set by the government. This commitment to sustainability is also reflected in Isuzu's commitment to providing top-quality customer service.

ISUZU trucks are equipped with a unique combination of power and performance, making them a great choice for traversing long distances on South Africa's roads. The trucks feature powerful engines that ensure smooth and reliable handling and advanced safety features to keep drivers safe. 🌱

JCB HAS MANUFACTURED OVER 50 PROTOTYPES POWERED BY HYDROGEN

A team of 150 engineers is working on the pioneering initiative to develop hydrogen combustion engines – and more than 50 prototypes have already been manufactured at JCB's UK engine plant.

By Anthony Bamford, JCB Chairman

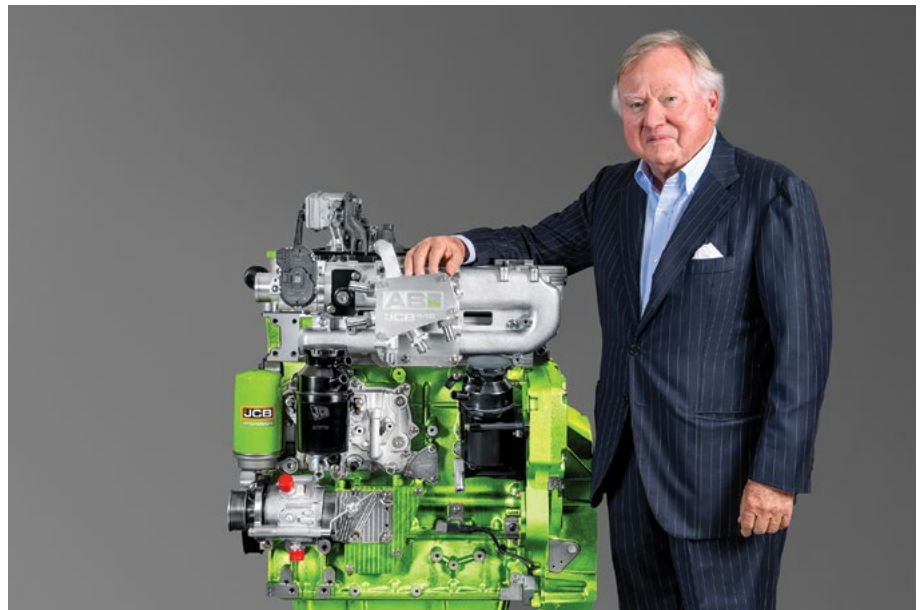
The brand new JCB hydrogen combustion engine was recently unveiled, and with it the company's zero-carbon emissions solution for construction and agricultural equipment.

The JCB engineering team has made enormous strides in a short space of time to develop a hydrogen internal combustion engine. As the first construction equipment company to develop a fully working combustion engine fuelled by hydrogen, I'm delighted we are now able to present this technology on the international stage.

Prototype JCB hydrogen engines are already powering backhoe loader and Loadall telescopic handler machines. JCB has also made a major breakthrough in proving the wider appeal of hydrogen combustion technology by installing one of the super-efficient hydrogen engines into a 7.5 tonne Mercedes truck - a retrofit which was completed in just days. JCB has also unveiled its very own designed and built mobile refuelling bowser to take the fuel to the machines. The bowser has enough hydrogen gas to fill 16 hydrogen backhoe loaders and is able to be transported either on the back of a modified JCB Fastrac tractor or on a trailer.

The JCB engineering team has gone back to first principles to completely re-design the combustion process to work for hydrogen. In doing so they have achieved two major things: secured JCB's place in history as the first construction equipment company to develop a fully working combustion engine fuelled by hydrogen and steered us towards the production of a landmark 50 hydrogen combustion engines.

JCB has also been at the forefront of electric technology development to meet customers' demands for zero-carbon products. While battery electric is suitable for smaller machines which do less hours and typically use less fuel, larger machines have a higher energy requirement. This would result in larger batteries, which would take longer to charge, making them less suitable for machines which work multiple daily shifts and do not have the available downtime to recharge.



As a result, JCB has concentrated its development of electric machines on its compact range, including the 525-60E Loadall telehandler and the 19C-1E mini excavator - the world's first electric mini excavator. As the company examines future fuels which deliver zero emissions, it has left no stone unturned. In its search for a mobile fuel which can be taken to the machine, ensuring maximum uptime and fast refuelling, HVO, biogas, E-fuels, ammonia, and hydrogen have all come under the microscope. Interestingly, JCB engines have been approved for use with HVO since Stage IIIB / Tier 4i engine legislation came into force.

The majority of these alternative fuels require the production of hydrogen to make, so it makes perfect sense to use hydrogen in the first place because it is a clean zero carbon fuel which can be produced from renewable energy. Hydrogen also offers a potential solution to the challenge of batteries on larger machines; it allows for fast refuelling and is a mobile fuel solution, allowing fuel to be taken to the machine."

The unique combustion properties of hydrogen enable the hydrogen engine to deliver the same power, the same torque, and the same efficiency that powers JCB machines today, but in a zero-carbon way.

JCB has made a major breakthrough in proving the wider appeal of hydrogen combustion technology by installing one of the super-efficient hydrogen engines into a 7.5 tonne Mercedes truck - a retrofit which was completed in just days.

Hydrogen combustion engines also offer other significant benefits. By leveraging diesel engine technology and components, they do not require rare earth elements and critically, combustion technology is already well-proven on construction and agricultural equipment. It is a technology which is cost-effective, robust, reliable and well known throughout not just the construction and agricultural industry, but the whole world. 🌍

FAW Trucks head office in Isando, Kempton Park.



GROWING TO MEET EXPANDING MARKETS

Steady demand for specialist plant hire services is driving the growth of Benoni-based service provider, Webcon Mini Plant Hire. They required an expansion of their available fleet for several different specialist requirements. ELB Equipment made the expansion possible.

to soak up demand from its clients across the country and neighbouring countries.

Webcon has equipment as far as Zimbabwe, Kathu, Malelane and Durban within the construction industry making quality a priority especially when it comes to maintenance and breakdown cost elimination.

"ELB Equipment offers package deals in addition to parts and services, making it a one-stop shop for all my earthmoving need".

Building plant hire fleets

During the handover of the machines, ELB area sales manager, Elmien Bolleurs and the Pre-Delivery Inspection (PDI) team collectively handed over the five earthmovers to Webcon, bringing them to 55 earthmovers in total.

This comes to show that good business relationships could affect the long-term growth of an organisation.

Davies and his wife Michelle were met with warm congratulations as they came to collect the machinery.

Webcon has been a loyal customer of ELB Equipment since 2010.

"ELB's price is right, their service is affordable, and their parts are available even in the aftermarket."

Davies continued to say that ELB Equipment goes out of its way to sort out

"The companies have a nearly half-century-long relationship and share similar outlooks with an emphasis on customer service and building lasting relationships. Staff cultures and ethics are aligned and as a bonus, the companies' headquarters are less than ten kilometres apart."

Desmond van Heerden, CEO, ELB Equipment

TALKING POINT



Owner of Webcon Mini Plant Hire, Sakkie Davies, says demand for smaller plants such as TLB's has grown recently, adding that customers are moving to suppliers of quality equipment who can take a load off their shoulders by maximising equipment availability and solving their onsite challenges.

For this to be effective, Davies views relationships as the most important part of his business, and companies like Webcon are thriving on repeat business and the strength of their offerings.

The strength of relationships also extends to suppliers and Webcon recently ordered a further five machines from its long-time supplier ELB Equipment with the purchase of four GEHL GBL X900 TLBs and a single Sumitomo SH210 excavator. These are expected



The four GEHL GBL X900 TLBs and one Sumitomo SH210 excavator at ELB Equipment before the handover to Webcon Mini Plant Hire.



ELB Equipment offers package deals in addition to parts and services, making it a one-stop shop for all my earthmoving need.



Sakkie Davies views relationships as the most important part of his business, and companies like Webcon are thriving on repeat business



Webcon has equipment as far as Zimbabwe, Kathu, Malelane and Durban within the construction industry



The Lovol range of loaders was awarded a multi-franchise supplier to ELB Equipment, with dual distributorship rights alongside Dura Equipment's established sales and service outlets.



ELB follows a Best-of-Breed philosophy which is aimed at opening the doors for customers to become more profitable

TAKE

QUICK

any issues without hassle. Bringing their part in maintenance and support, ensuring continued business from Webcon and other loyal customers.

"Commitment to teamwork is the key to any successful business," says Davies.

He goes on to explain how every aspect, every part, and every person plays a vital role in smooth operations, he exclaimed how important it is to be ready to work especially when it comes to the point when it's your turn.

He added ELB Equipment makes a profit and Webcon makes a profit, so it's a win-win resulting in the understanding that without solid relationships in place, success is much harder for a business to attain.

Expanding equipment through partnerships

In the second half of 2022, a new chapter unfolded in the earthmoving equipment industry where two giants in the sector cooperated to supply a thriving wheel loader brand and keep up with demand.



Due to the keen pricing, low operating costs and extreme reliability of the Lovol range of loaders the company has awarded multi-franchise supplier, ELB Equipment, with dual distributorship rights alongside Dura Equipment's established sales and service outlets.

The partnership provides ELB customers access to value-based loaders that easily go toe-to-toe with premium brands in terms of durability, reliability, productivity and cost of ownership.

Sensible partnership

ELB Equipment CEO, Desmond van Heerden, says the distribution agreement is a match made in heaven.

The companies have an almost half-century-long relationship and share similar outlooks with an emphasis on customer service and building lasting relationships. Staff cultures and ethics are aligned and as a bonus, the companies' headquarters are less than ten kilometres apart.

Mature supply chains exist for the distribution of machinery and spare parts which are easily integrated to provide customers of either company with the same equipment, parts and service at a guideline for pricing. The biggest advantage for customers is of course having a Lovol wheel loader outlet nearby for sales, services, spares, and support wherever they are in the sub-region.

The machines have become somewhat of a sensation in the earthmoving community due to their performance in the field in mines, construction, industrial, quarrying, and agricultural operations. Evidence of this can be found among company owners who report consistent cost-of-ownership savings of about 40% over comparable brand machines including fuel, parts, and servicing. Added to this the capital cost of the Lovol machines is up to 30% lower than premium competitors.

Unbeatable value

Van Heerden concludes that the Lovol wheel loaders fit the company's Best-of-Breed philosophy and open doors for customers to become more profitable.

"Lovol wheel loaders are, in my opinion, the best machines money can buy right now. We have keenly watched our friends at Dura Equipment Sales grow the brand and succeed in the face of nervous times due to the economic downturn and more recently during Covid.

"The brand's warranties underpin the confidence in Lovol equipment, and its reputation speaks for itself. There is a lot of synergy and passion among us and not only as far as the Lovol product." 🌟




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ACCELERATING THE MISSION TO ZERO

Achieving net zero emissions by 2050 will require a complete transformation of the energy landscape. The world wants an energy revolution. They want a quick transition to a smarter, brighter, more sustainable future. ABB understands the urgency of this need. However, we also know that the transition cannot happen overnight.

Real progress will take a balanced approach with a journey mindset: Strategic investments scaled over time to reduce carbon emissions, waste and cost. The transition needs partners who enable the pathway with ROI, today and in the future. Partners who offer real solutions today and are willing to invest in needed innovation for our low carbon future.

As your partner in a low carbon future, ABB can bring balance to this equation by enabling safe, smart and sustainable investment in our low carbon future. By combining the full power of our integrated automation, electrification and digitalisation solutions, we will help you meet your commitments and maximise the value of your operational investments, while reducing carbon emissions, waste and cost throughout

the energy transition journey.

Not only ABB as a company, but also our customers, want to contribute to a low carbon society. Yet this requires a willingness to relinquish our collective dependency on the forms of energy that result in the slow poisoning of the planet.

There are five key steps to achieving carbon neutrality. Firstly, to deploy digital solutions for smart green buildings and energy management such as monitoring, control and optimisation, which is the core of the Mission to Zero offering.

Next is to increase energy efficiency by utilising building management systems and installing new, highly efficient motors and drives, for example. Maximising electrification is also important. For example, heat pumps and having an EV charging infrastructure.

As per our Technology Blueprint, a typical smart building will use interconnected technologies to improve comfort and performance across energy management, water use, air conditioning, access, automation, lighting, remote monitoring, and communication networks.



The installation EVE, from photovoltaic technology and wind turbines, through to battery energy storage systems and thermal energy storage. Finally, procuring renewable energy from the grid and offsetting any remaining emissions.

In summary, Smartification, Digitalisation and Electrification of everything, coupled with energy efficiency and renewable electricity, is proving to be the solution for most carbon emissions. Nevertheless, some hurdles still exist.

From a technology standpoint, excessive consumption of electricity by inefficient equipment (for example, legacy HVAC systems, drives, pumps, etc.) or simply due to poor asset or occupancy management, result in vast energy wastage. This presents a huge potential for smart building energy management systems, coupled with highly efficient variable speed drives, purposely built and configured for the application.

Moreover, sheer electrification of heat in buildings with improper insulation can be inefficient. This creates a need for carbon-free high-temperature heating from bio-oil, biogas or hydrogen. From a business model standpoint, few building owners can afford deep energy efficiency retrofits.

This is creating a need for OPEX-based financing models like leasing or X-as-a-service. From a go-to-market standpoint, building owners expect 'one-stop shop' solutions. This creates a need for integrated end-to-end solutions and a necessity for such a solution as Mission to Zero to be adopted.

Products and Solutions

As per our Technology Blueprint, a typical smart building will use interconnected technologies to improve comfort and performance across energy management, water use, air conditioning, access, automation, lighting, remote monitoring, and communication networks.

Thanks to ABB's solution areas within the ABB Ability Building Ecosystem, building operators and facility managers can have a digital control of all these elements, and smart buildings will capture their inherent opportunities to become more environmentally friendly – from substantially contributing to carbon reduction targets through efficiency gains in heating and cooling equipment and in the building itself.

The ABB digital solutions enable constant surveillance and optimum control of energy production, consumption and storage. Largely autonomous, this learning system calculates the optimum energy flow based on predictive data and compensates for deviations in real time. In a Mission to Zero site, these technologies are combined for a holistic approach that can be easily scaled according to the requirements of the building.

The digitalisation of buildings through connected technologies and building

automation has also a key role to play in helping to manage grid resiliency and reliability and to reduce energy costs while increasing energy efficiency.

Moreover, it is an important step towards the energy transition, as it enables the building to provide value-adding services towards the modern energy grid and thus supports the shift from 'consumer' to 'prosumer' – facilitating concepts such as virtual power plants and maximising the value of Distributed Energy Resources (photovoltaic, batteries) on a broader scale.

Within that context, the programme strongly leverages also on the ABB Ability™ Energy and Asset Manager for monitoring, optimization and maintenance prediction using big data and artificial intelligence.

The typical solution scope for a Mission to Zero project includes:

- **Distributed Energy Resources:** Such as on-site photovoltaic technology, EV-chargers, energy storage, motors a drives, power supply and protection, as well as digital solutions for energy management, including monitoring, control and multipurpose optimisation.
- **Building automation and HVAC controls:** Such as digital integration platforms, building automation and control, HVAC control and optimisation, space management and wellness and productivity, lighting and shading control and presence detection.

Although borne from the Electrification Business Area, Mission to Zero spans the entire organisation and many product and solution sets, combined with third party technology via our partnership ecosystem.

These include:

- Building control and automation through ABB Ability™ Building Ecosystem, including HVAC, lighting, and shading control and automation via i-bus® KNX and ABB Cylon® BACnet® solutions.
- Metering, monitoring and optimisation of electrical power and energy flows through ABB Ability™ Energy and Asset Manager platform.
- Power distribution with ABB System pro E power or MNS® 3.0 low-voltage switchgear, including Emax 2 air circuit breakers or NEO Gear low-voltage switchgear solutions.
- Electric vehicle charging infrastructure (EVCI) for fast (DC) and slow (AC) charging applications.

The ABB digital solutions enable constant surveillance and optimum control of energy production, consumption and storage. Largely autonomous, this learning system calculates the optimum energy flow based on predictive data and compensates for deviations in real time.

- Highly efficient and smart electrical motors and variable speed drives.
- Battery energy storage systems (BESS) for maximising PV self-consumption and peak-shaving.
- Photovoltaic systems for local green energy generation (provided by partners).

With our 2030 sustainability strategy, we are actively enabling a low-carbon society as well as working with our customers and suppliers to implement sustainable practices across our value chain and the lifecycle of our products and solutions. We are equally committed to driving social progress, along with our suppliers and in our communities.

A key part of our 2030 sustainability strategy is to support our customers and suppliers to reduce their emissions and achieve carbon neutrality in our own operations. Our greenhouse gas emissions reduction targets have been validated by the Science Based Targets initiative as being in line with the 1.5°C scenario of the Paris Agreement.

To ensure that we are focused on achieving our goals, our sustainability targets are integrated into our decision-making processes, plus we have accountabilities and incentive plans in place to drive action. 🌱

Durable drives for belt conveyor systems

BMG's new NORD MAXXDRIVE-XT industrial gearboxes, which were launched at the Electra Mining trade show last year, have been well received by leaders in bulk logistics, particularly for use in belt conveyor systems.

MAXXDRIVE-XT industrial gear units - developed by NORD DRIVESYSTEMS to meet the demands of conveyor technology drives used in handling bulk goods and minerals - have advanced features for high thermal and mechanical load capacities, durability for extended service life and low maintenance requirements.

"The power and speed ranges of the two-stage right-angle gear units have been specially designed for industries that require low-speed ranges, in combination with high powers," explains Deon Crous, National Sales Manager - Gears, for BMG's Electromechanical Drives division.

"Our drive solutions are individually configured for customers according to the modular principle which is based on a wide range of frequency inverters, motors and gear units, as well as coupling and brake

systems - each with various options.

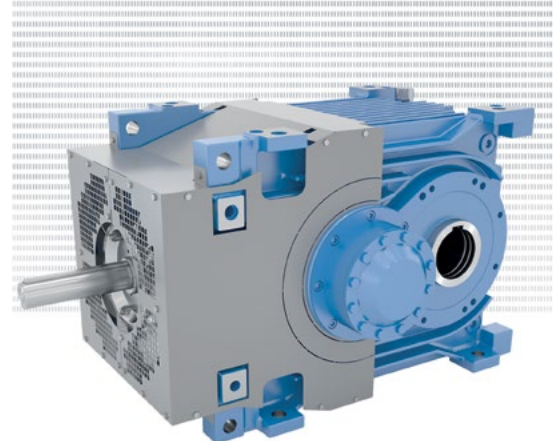
"Features include hydraulic couplings that are tailored for a particular process and Taconite seals, which protect radial shaft seals against abrasive dust and corrosion to ensure smooth operation and low maintenance requirements, even in tough operating conditions. Large roller bearings and centre distances increase the load capacity of the system and extend service life of components."

MAXXDRIVE XT units, which provide output torques of 15 to 75 kNm with speed ratios from 6.3 to 22.4, are available from BMG in seven sizes for powers from 22 to 2,100 kW.

Customised explosion-protected motors and geared motors are used to minimise the risk of an explosion of flammable dust in bucket conveyor applications.

MAXXDRIVE XD industrial gear units are suitable for use in mining and quarrying, ports, logistics and shipyards, in metal, chemical and paper facilities and for bulk goods trans-shipment.

With the launch of these new industrial gearboxes, BMG is able to offer a com-



plete package of running gear and lifting gear drives for cranes from a single source.

BMG's team of technicians supports the NORD range with a technical advisory and support service tailored to meet the precise specifications of contractors, designers and the end-user. Local assembly at BMG World in Johannesburg, enables prompt delivery of drive systems and the quick availability of spare parts. ⚙️

FUCHS keeps mining going at a unique branch

Springbok in the Northern Cape is home to one of FUCHS Lubricants South Africa's unique branches.

It supplies the complete lubrication requirements of leading mining businesses in the area.

Area Manager Dirk Coetzee explains that Springbok is part of a wider network serving the broader mining industry, including strategic locations such as Kuruman and Emalahleni. FUCHS Springbok currently services eight major customers and a host of smaller mining and private companies.

"What is interesting is that we are diversifying our reach in the Northern Cape region by branching out into other industrial sectors," notes Coetzee.

He attributes this to the broad product range offered by FUCHS, combined with its focus on niche markets. Its exemplary customer service continues to distinguish the Springbok branch, with two field service technicians on standby to attend to any specific client issues.

With 24 years of experience, Coetzee maintains longstanding business relationships with his key clients. He began his career in the lubricants industry in November 1998 at Lubritene, which was subsequently acquired by FUCHS. "We grew rapidly and had to move premises



a couple of times," notes Coetzee. At that time, the focus was largely high-performance grease, but Coetzee quickly expanded the branch's product offering to include commercial oils, which are also sold in Namibia.

Today the Springbok branch is six employees strong, including one in Namibia. There are two warehouses comprising 700 m², together with offices and stores.

"We also offer our clients on-site services, pump-on services and much more,"

highlights Coetzee. Stock is sourced from the main Isando, Johannesburg facility 1 400 km away. Due to the extensive logistics involved, Coetzee always ensures sufficient stock to meet the needs of the branch's regional client base.

FUCHS has been a trusted partner of the global mining industry for over 85 years, offering a comprehensive range of lubricants for the arduous operating environments represented by surface and underground applications. ⚙️

African Mining Indaba unlocked industry investment potential

The 2023 African Mining Indaba recently held in Cape Town, drew mining sector heavyweights from across the country and the globe. Mining Indaba senior manager for communication strategy, Laura Cornish said that “when industry and government are able to come together and explore collaborative opportunities, it fosters an alignment of ideas and that decreases or lessens the barriers to alignment.”

Connecting influential thought-leaders from across the globe, the Mining Indaba welcomed high-profile guests including Felix Thisekedi, President of the Democratic Republic of the Congo, Chief Executive of Anglo American, Duncan Wanblad, and H.E. Eng. Khalid Bin Saleh Al-Mudaifer, Saudi Arabia’s Vice Minister of Industry and Mineral Resources for Mining Affairs.

While South Africa remains an industry leader in the mining sector, the future of the industry will be determined by the sustainability of existing and new partnerships between stakeholders, investors, government, and corporations.

Speaking on South Africa’s role in the Mining Indaba, Brand South Africa’s Acting



General Manager for Research, Shamiso Hlatshwayo said “As a custodian of the South African Nation Brand it is particularly important for us to plant the seed in investors’ minds about what South Africa has to offer in relation to mining.”

Hlatshwayo continued, asserting that it is important to showcase South Africa by highlighting its competitiveness and unique value proposition as an attractive investment opportunity.

With many investors looking towards new sustainable energy sources, Hlatshwayo asserted that South Africa was “strategically placed to be one of the regional

leaders in creating a green energy future.”

It is evident that Africa is not resorting to complacency when it comes to the continent’s mineral riches, but is determined to ensure the future stability of the industry through international collaboration and responsible mining.

The African Mining Indaba continues to be a powerful platform in its ability to connect industry leaders and propose sustainable solutions that will not only protect the mining sector’s present economic significance but also secure a stable industry that can feasibly prosper into the foreseeable future. 🌱

TORSA launches its pan-African business hub in South Africa

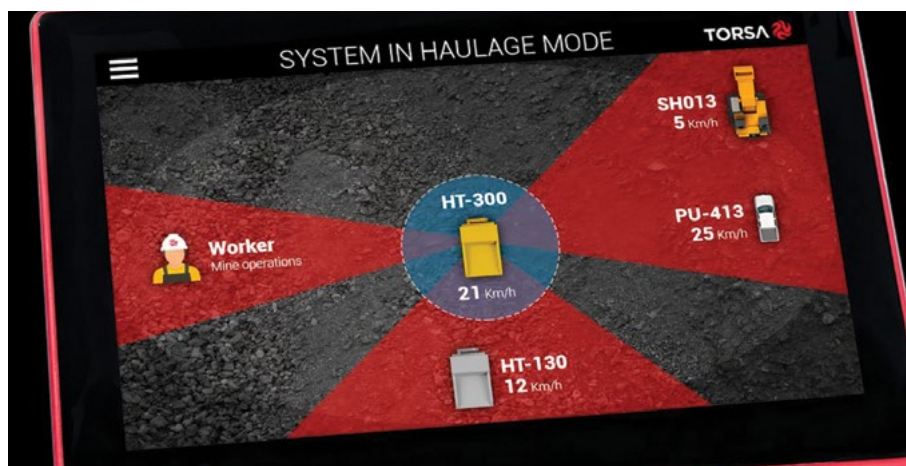
Collision avoidance technology addresses recently gazetted South African health and safety regulations to reduce harm and fatalities in local mining.

Leading Spanish technology company TORSA has launched its pan-African business hub in South Africa with intentions to drastically reduce mining incidents, and most importantly, fatalities in line with a presidential Memorandum of Understanding (MoU) signed end 2022.

During an official visit to South Africa in October 2022, South African president Cyril Ramaphosa and Spanish President Pedro Sánchez signed a MoU on cooperation in the field of Industry 4.0. President Sánchez announced that Spain will make approximately ZAR35 billion available over the next five years to support the participation of Spanish companies’ projects in South Africa and beyond.

With the governments intent to see higher levels of foreign direct investment by Spanish companies in South Africa, TORSA accelerated its expansion to the African continent as its collision avoidance technology addresses recently gazetted South African health and safety regulations, to reduce harm and fatalities in local mining.

Most accidents on mines involve heavy equipment, vehicles and workers. This



prompted the Department of Mineral Resources and Energy to bring into law the Chapter 8 clauses of the Mine Health and Safety Act Regulations relating to Level 9 vehicle intervention for collision avoidance in trackless mobile machinery, both surface and underground.

Under this law, mobile machines must be fitted with technologies that automatically detect the presence of any pedestrian or other machine within its vicinity. In the event where no action is taken to prevent potential collision, further means shall be provided for the mobile machine to return to a safe speed after the brakes

are automatically applied.

The company’s award-winning solutions, such as its High Precision Collision Avoidance System with Lidar3D and GPS technology (among other technologies) that offers centimetre precision and its unique Monitor Vibration System, has reduced human injury reports by 80 percent in a year.

De Diego says that in addition to its South African launch, TORSA has its sights set on the Copperbelt region and other important markets including Botswana, Mozambique and Morocco for future African expansion. 🌱

The new hands-free rod handling system from Pacific Technologies

The fully automated new system for loading drill rods and core barrel operation is available to enhance safety, lower costs and improve productivity in industries that require drilling.

"When manually loading drill rods, accidents can occur with the possibility of severe injuries. Automating this labour-intensive operation will ensure the safety of staff and a more efficient and productive process," said Eddy Mathe, MD of Pacific Technologies. Supplied by Pacific Technologies and its drilling rigs supplier, Hanjin D&B, Mathe said the system is particularly suited for applications such as exploration drilling, water drilling, reverse circulation, and geothermal drilling.

"The automated solution is different to most other hands-free rod handlers which automate only the rods but not the core barrel. The fully hands-free system aims to offer better performance than competitive products, while also ensuring a safer working environment as a result of reduced human intervention, further enhancing the level of safety," says Mathe.

"The system ensures compliance with



government regulations, to improve safety, and to ensure ease of use includes a remote control for tramming of the rig, the rod loader and rod carrier."

The rod loader has a magnetic handler which lifts the rod magnetically and, as an added safety feature, the rod loader also has 'jaws' for the handling of rods. The magnetic and jaw system is designed to enable the rod loader to

handle the core barrel with greater ease and without manual intervention.

The handling system covers the entire process, from handling drill rods from the rod carrier using the rod loader to feeding the rods into the rod feeder, which feeds the rods into the rod handler. All of which are fully automated and hands-free. The unit includes an air-conditioned cabin, with the rod handler attached to the rig. 🌐

New L120H Electric Conversion wheel loader

Volvo Construction Equipment (Volvo CE) has developed a solution to convert the L120 wheel loader to electric. The aim is to fulfil the market appetite for more sustainable solutions in the mid-size range.

Volvo CE introduces L120H Electric Conversion wheel loader. Developed in conjunction with partners – Parker Hannifin and converted by Volvo Group's own CE Engineering Solutions – the 20-ton L120H Electric Conversion will be commercially available for selected customers in Europe during 2023.

Carl Slotte, Head of Sales Region Europe at Volvo CE, says: "There is no time to wait – we need to deliver solutions that allow our customers to achieve their decarbonisation goals. Change starts here. Our commitment to partnership allows us to take a leading position in transforming our industry, with electric solutions that are built to fulfil market demand and tailored to suit the changing needs of our customers. Working together, we are scaling up our portfolio of electric machines, extending the versatility of our range and transforming our industry towards a carbon-neutral future."

The L120H Electric Conversion delivers the same powerful performance as its diesel counterpart, but with zero exhaust



emissions and near-silent operation. These benefits combine to offer enhanced comfort for both the operator and those working near the machine.

Powered by 240 kWh batteries, it provides a runtime of approximately five hours in most medium-duty applications. Consistent with Volvo's existing charging solutions, it is estimated to charge from 0-100% in just 1.5-2 hours.

With the L120H Electric Conversion, customers can enjoy the following features

as standard: Comfort Drive Control, Load Assist with On-Board Weighing plus radar detection with our new Collision Mitigation System. In addition, the L120H Electric Conversion will be supported by dedicated electromobility applications which allow the operator to check the battery and charging status and to preheat the cab.

Depending on market demand, it brings the possibility to convert existing customers' L120H wheel loaders to electric in the future. 🌐

Bakwena announces new road maintenance plans

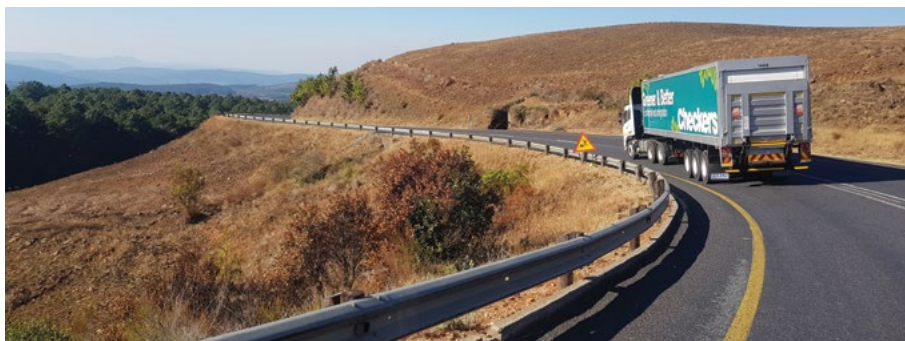
Bakwena manages and operates two vital stretches of the N1 and N4 roads stretching from Tshwane to Bela Bela (90 km), northwards to Zimbabwe/Zambia and linking Gauteng westwards, through Rustenburg and Zeerust, to the Botswana Border (290 km).

"Without maintenance, road infrastructure deteriorates rapidly, especially when the realities of the climate crisis are felt as we have seen with the deluges in several provinces over the last two weeks," says Solomon Kganyago, Chief Operating Officer of the Bakwena Platinum Corridor Concessionaire.

The concession contract between Bakwena and the South African National Roads Agency (SANRAL) came into effect in 2001 and ends in 2031. As part of the contract, Bakwena must do periodic and routine maintenance, plus specific upgrading works.

The two existing major rehabilitation projects underway on the N1/N4 toll route are progressing well, despite the recent rains.

The project includes the N4 between



Kameeldrift and Ga-Rankuwa Interchanges.

This 18-month project commenced in January 2022 with an estimated completion date of August 2023. The rehabilitation entails extensive removal and reconstruction of layer works, followed by a 40 mm asphalt overlay on the main carriageway in both directions including some of the key interchanges on the route i.e., R80 and R566 Rosslyn.

Another ongoing project is on the N1 between Pienaarsrivier and Bela Bela.

The project started in July 2022 with an estimated completion date of July 2023. The work entails milling and reconstruc-

tion of layer works, followed by a 40 mm asphalt overlay. Lane closures are also in place during this process.

Planned new works include the N1 between Pumulani Plaza and Pienaarsrivier, set to start in May.

The Wallmansthal Ramp Plaza will also see revitalisation, set to start in March.

"We believe that our work cannot be carried out responsibly without working with the communities alongside the N1/N4 routes. Our programmes have had a meaningful impact on many aspects of the lives of people in communities around the routes that we operate," concludes Kganyago. 🌱

Werner Pumps provides improved operator safety

Werner Pumps has invested in new devices for each of its rental combination jetting and vacuum trucks to improve operator safety in the field.

"Our rental units are often used in tricky conditions and applications, such as for cleaning out blocked sewers or spillage clean-ups," says Sebastian Werner, MD of Werner Pumps, leading local manufacturer of high-pressure jetting equipment.

"This means our operators may need to get into a manhole or an oil pit to get the nozzle to reach where it needs to go, which can be a safety risk. We've therefore invested in a special tripod device for each truck that can be used to more safely lower or lift the operator."

Werner explains that the tripods are designed specifically for vertical descent in confined spaces. They have sturdy but lightweight aluminium legs that lock in the open position automatically and include their own winch system, so there's no need for a separate pulley / bracket assembly. The hoist attaches directly, making set-up and pack-down quick and easy, and there's a fall arrestor brack-

et that can be attached to one of the legs. There's also a maximum height indicator for ease of use (maximum extension is 2.45 m) and the legs are telescopic, meaning they take up less space in the truck once packed down.

"The operator sets up the tripod above the hatch they need to enter, and can be slowly lowered into the hole safely. There is also an accessory pulley attachment that can be fixed to the tripod head, should the operator require tools to be lowered or lifted too," explains Werner. "This makes client jobs much safer for our operators and also gives our customers peace of mind when they are renting a Werner Pumps unit. As far as we know, we are the first local business to include such a device in our rental unit. If there is interest from our customers in purchasing these tripods for their own trucks, we will investigate stocking them in future."

Werner Pumps is continually looking for ways to improve its customer offering. With its new welding machine installed and operating, Werner says the business can cut down on lead times for its 100% locally manufactured jetting and vacuum trucks. 🌱



Volvo leads the market for electric trucks

Last year, the number of heavy electric trucks on the roads in Europe and the United States grew rapidly.

Volvo Trucks have now sold more than 4,300 electric trucks globally in more than 38 countries. In Europe, Volvo Trucks is the market leader with a 32% share of the market for heavy electric trucks, and in North America, nearly half of all heavy electric trucks registered in 2022 were Volvo trucks.

In 2022 the market for heavy (≥ 16 tonnes) electric trucks in Europe, grew by 200% to 1,041 trucks, and Volvo Trucks holds the highest share of this market.

"We are determined to lead the electric truck transformation and our market-leading position in 2022, not only in Europe, but also in North America and other markets, is proof that we are doing just that. Although, the market for electric trucks is still small, but the trend is clear: many of our customers are now starting their own shift to electric. We intend to be the catalyst for this transition and aim for 50% of our global sales of new trucks



to be electric in 2030," says Roger Alm, President of Volvo Trucks.

Since Volvo Trucks started production of fully electric trucks in 2019, the company has sold more than 4,300 electric trucks in more than 38 countries around the world.

Volvo currently offers the industry's broadest product line-up with six products in series production, catering to a very wide variety of

transports in and between cities.

"We now have a product portfolio that can cover most types of transportation for all kinds of customers. Looking at the goods flow patterns, it's possible to electrify nearly half of all transports with our line-up of electric trucks," comments Roger Alm. "We see it as our mission to support our customers in making that happen." 🌱

A first for university students, EV buses at UJ

The University of Johannesburg (UJ) has unveiled its new electric vehicle (EV) buses.

The buses, which will be utilised for student transport to various campuses, are the first of their kind in South Africa.

The buses are a direct response to UJ's efforts at sustainability, as part of the University's plans to reduce carbon emissions.

Two brightly painted EV buses have been added to the UJ fleet. For UJ there is cause to celebrate the new transport since the EV buses produce lower carbon emissions, but offer a smooth ride, even faced with Johannesburg's steep hills.

Special Projects advisor Professor Andre Nel explained the process that led to this project coming to fruition.

"It started more than 18 months ago, as part of our drive to reduce our carbon footprint at UJ. We've always had a strong focus on sustainability issues. After implementing large numbers of solar panels, one of the next questions was how can we further make UJ sustainable? After some research, the obvious answer was how we were going to cut our carbon emissions in one area, and that area was transport. Transport makes up about four-and-a-half per cent of UJ's footprint and reducing that in any way is something we desired".

Dr Mpoti Ralephata, UJ's Chief Operations Officer, says that 15% of energy at UJ comes from solar, which is enough to



power the buses during loadshedding. This ensures the buses can be part of the fleet at all times.

The buses offer many advancements to the existing UJ fleet. Unlike normal diesel-powered engines, EV buses are almost silent. Each bus has a capacity of 76 passengers, with 57 seated and 19 standing.

For added safety, the buses are fitted with closed-circuit television (CCTV) cameras and stop buttons. The stop buttons make communication with operators easier, as passengers can draw the driver's attention without being intrusive when approaching

their destination. Adding to the high-tech design of the buses is that they are equipped with USB charging ports for students.

A fully-charged bus can cover a range of 350 km range, and this distance is less than the 200 km route the buses will cover day-to-day. There are currently two charge points for the buses, one on campus and one at the bus depo.

The lifespan of each bus is projected at 15 years, and each bus will significantly reduce fuel costs for the university. UJ drivers will also receive additional training to operate the new buses. 🌱

The logistics behind transporting 30 Terex machines

Terex, renowned for materials processing machinery and aerial work platforms, with DHL Global Forwarding's Industrial Projects, has chartered a vessel to convey a consignment of 30 Powerscreen, Finlay and Terex Ecotec machines from Southampton, UK to Brisbane, Australia.

This is the first charter of its kind for Terex.

"Towards the end of last year, our RORO (roll-on/roll-off) capacity to Australia was suspended due to port congestion, backlog due to COVID, and increased global demand. Vessels were overbooked and the backlog was not reducing. While we were allocated slots, this did not meet the demand for our products.

We decided to research alternative options for getting equipment to our Australian customers, which was a huge undertaking. Our equipment varies in size and weight, and not only is lifting them on and off vessels difficult, the safety of doing so is always our top priority. After exploring various options, we found a solution that enabled our machines to be tracked and secured onto a platform, which would be lifted by cranes and lowered into the hull of the ship," says Claire Hamilton, Category Director - Metal Fabrications & Logistics,



Terex Supply Management and Transport

Before loading, the Terex Sourcing and Supply team worked with various stakeholders in bi-weekly meetings to plan every detail. Specific engineering information was provided for each machine, and dates were agreed upon among all parties for getting machines to port. In total, 30 Terex machines weighing 1,092 mtons / 5,012 cbm were delivered to the Port of Southampton.

Support was provided to transfer the machines from storage to dockside, provid-

ing solutions as problems occurred. Terex service engineers checked machines before loading and supporting stevedores at the dockside and on the vessel.

Loading to the vessel was performed by tandem lift operation of the ship's cranes and lifting platform. Embarkation and disembarkation to and from the ramp were undertaken using ramps on the quayside and in the ship's hold. In total, it took eight days for all 30 machines to be safely loaded onto the vessel. 🌀

New Hino 1627 Predator for Free State Cheetahs

Toyota South Africa Motors (TSAM) delivered a brand-new bus to the Free State Cheetahs at Toyota Stadium in Bloemfontein in February.

The Hino 1627 Predator is a custom-designed 36-seater boasting wider seats and generous legroom for occupants. The seats can recline up to 180 degrees, allowing passengers reasonable comfort and physical relaxation during travel.

Other in-vehicle amenities include two video screens, a beverage freezer/cooler, air conditioning and charging ports on every seat. The bus also comes with on-board wi-fi supplied and sponsored by Toyota's telecommunications partner Vodacom. The bus's livery – inspired by the Toyota Cheetahs' striped jersey – looks dynamic and energetic even when the bus is stationary.

Senior Vice President of Sales and Marketing at TSAM, Leon Theron said: "We're proud of the partnership we've had with the Toyota Free State Cheetahs over the past 12 years and would like to see it grow from strength to strength. We hope that this Hino bus will instil great pride in the team and also inspire our supporters to continue rallying behind the Cheetahs."



The Hino bus will not only benefit the senior men's team but also the Free State Women's Rugby and the junior teams of the Toyota Academy. In fact, the bus sponsorship is a testament to TSAM's commitment to supporting the Toyota Cheetahs in their pursuit of excellence on and off the field.

"We are extremely grateful for the continued support by TSAM, who has been a proud

sponsor of the team since 2011," says Ross van Reenen, CEO of the Free State Cheetahs.

"This gift is a testament to the strong relationship between the two organisations and our commitment to promoting rugby in the Free State community and nationally."

The Toyota Cheetahs would like to thank Toyota South Africa for their incredible generosity and unwavering loyalty towards the Cheetah brand. 🌀

Ctrack CONTINUES TO EVOLVE INTO 2023

Ctrack, South Africa's leading telematics and fleet management provider, is continuously developing and refining its innovative hardware and software offering in order to provide its customers with the latest solutions in an ever-changing environment.

Ctrack continues to strive to offer cutting-edge solutions for the simple and effective management of a wide variety of movable assets.

"Ctrack understands that the environment in which we operate is constantly changing and that our customers are constantly facing new challenges. Out of necessity our solutions are always evolving, and we look forward to offering our customers the latest and greatest in telematics and fleet management into 2023," says Hein Jordt, Chief Executive Officer of Ctrack Africa.

Always developing

When developing and refining their operation, Ctrack always considers the five pillars of fleet management around which all solutions are developed. Risk, Cost Control, Fleet Utilisation, Operations Control and Asset Control remain at the core of all the solutions that Ctrack offer.

The basis of Ctrack is their hardware solutions that have been designed and refined locally, here in South Africa and truly built in Africa for Africa. This includes everything from compact battery-operated tracking devices to a variety of camera systems, allowing for the tracking and monitoring of a wide variety of movable assets across industries.

With the launch of Ctrack Crystal in 2022, fleet managers were given an all-encompassing, customisable platform. This new cloud-based offering places ease of use at its core while combining existing functionality with a host of new features.

Ctrack Crystal is always on and is cloud-based, allowing access to high-level overviews or detailed reports from any device located anywhere in the world. These reports are presented in a user-friendly way that makes the identification

of trends easier. Being cloud-based allows for seamless live updates, ensuring that Ctrack customers are always able to take advantage of the latest innovative refinements.

Fully customisable functionality combines all the existing features that consumers have come to know and love, along with a variety of new features into a one-stop, do-it fleet management platform.

One of Ctrack's big advantages is its flexibility and making many of these bespoke solutions possible is their proprietary SMILE technology with which the opportunities are endless.

"Ctrack is able to listen to the needs of our customers and offer them locally engineered solutions that give them the exact results that they require to run their particular business safely and efficiently," adds Jordt.

With SMILE the same hardware can be used to offer an endless array of control and data in a format that makes decision-making easy. The benefits of this have been proven in real-world scenarios time and time again. Industries such as crane operators, mining and the farming community have specific needs, all of which can be accurately catered for by this technology.

Safety at heart

A growing threat to the tracking and telematics industry is GPS jamming. This unscrupulous practice not only interferes with the transmission of telematics data that has become a vital part of successfully running a fleet operation but can also prevent the tracking of vehicles or assets as part of a stolen vehicle recovery attempt.

Ctrack's jamming mitigation can detect jamming interference and react accordingly by implementing several



Hein Jordt, Chief Executive Officer of Ctrack Africa.

mitigation strategies, that will ensure that the integrity of the transmission and data remains unaffected.

Ctrack's Driver Management tools provide multiple solutions to ensure that operations run effectively, efficiently, and safely. These tools allow for the management of operators, access and behaviour across multiple vehicles and assets.

Ctrack's Bureau Service is the complete outsourcing of fleet control room activities, backed by highly proficient hindsight, insight and foresight data analytics and reporting. Dedicated skilled fleet controllers meticulously monitor vehicle movements, incidents, alerts and alarms from a central support centre, which operates 24/7, and provides real-time support to optimise fleet operations.

"In an environment that can very quickly become overwhelmed by big data, providing feedback that allows for efficient decision-making is critical to effectively managing fleets," concludes Jordt.

Looking forward to 2023, Ctrack will be launching further enhancements to the popular Crystal software platform in the first quarter of the year, providing further proof that Ctrack's innovative fleet management software is unmatched in the market, providing peace of mind to fleet and asset managers in businesses big and small.

Some of Ctrack's efforts are also clear in their sponsorship of the 2023 Hollard Highway Heroes (page 8) which aims to reduce accidents involving fleets. 🌟

A large white Liebherr rough terrain crane is shown in operation on a construction site. The crane's boom is extended high into the air, lifting a large, dark metal bucket. The crane is mounted on a heavy-duty chassis with multiple outriggers, which are extended and resting on concrete blocks to stabilize the machine. The background features a clear blue sky with some wispy clouds and a line of trees in the distance. The overall scene conveys a sense of power and precision in a rugged environment.

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