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Driverless trucks –a way forward

By David Poggiolini

CONSIDERING the intense focus that automation is receiving from various truck original equipment manufacturers (OEMs), driverless trucks will become a reality in the foreseeable mid-term future. Till then, more developments will take place in the different automations levels to support drivers.

Rory Schultz, Sales Director of UD Trucks Southern Africa, notes that the South African transport logistics industry is also ready for this technology as it is facing similar challenges as those of its counterparts in other countries of the world. "The global transport logistics industry, including local third-party logistics providers, is under significant pressure. Transporters need to improve productivity, efficiency and safety. Automation of trucks provides the solution by removing the limitations of human performance from the transport of goods via roads to exceed existing benchmarks for excellence in productivity, efficiency and safety that have been established by among the best transporters in the industry," Schultz says.

He reminds that the OEM has already laid a solid foundation upon which to continue innovating to the point where the risk of human error is completely removed from the haulage of goods. This is especially the case in demanding line-haul operations.

There are five levels of truck automation, three of which UD Trucks has partly completed and South African transporters are, therefore, already using this technology with great success.

The first and second levels entail enabling the truck to perform all those functions that a driver would use their hands and feet to do. UD Trucks' Easy Safe Controlled Transmission (ESCOT) has eliminated the need for the left foot on the pedal and the left hand on the gear. The driver is, therefore, able to keep both hands on the steering wheel while driving the truck for improved safety.

Its ESCOT technology has evolved significantly since its introduction in 1995. The latest version, ESCOT-VI, is easier to operate. Its Foretrack technology uses global-positioning system to predict the road ahead. It also performs optimum gear changes, selecting automatically among



Filip Van den Heede, Managing Director of UD Trucks Southern Africa, gives his thumbs up to the Quon Euro 5.

the 12 ratios available. This is according to driving conditions, such as road gradient, corners and payload. In this way, the technology reduces fatigue and stress. Using the technology, even an inexperienced driver is able to achieve smooth progression with excellent fuel economy. Furthermore, ECO mode is now set by default to ensure constant fuel savings. Another innovation is the Escape function, which optimises the engaging and disengaging of the clutch to better navigate difficult conditions, such as ditches, by swinging the truck back and forth.

The third level of automation involves doing away with the need for drivers to constantly keep their eyes on the road. This level is followed by replacing drivers' attentive abilities with technology.

The Traffic Eye Brake system alerts drivers to potential dangers on the road, improving their response times to avoid possible collisions. It uses dual monitoring with millimetre-wave radar and camera to dramatically improve detection of the vehicle ahead. A warning indicator and an alarm alert the driver of a potential collision with a vehicle ahead. If the vehicle

reaches a distance where a collision is possible, brakes are applied quickly to eliminate or mitigate damage.

The fifth and final level of truck automation entails completely removing the driver from trucks by harnessing artificial intelligence.

Certainly, South Africa's readiness for state-of-the-art truck technology is demonstrated by the significant uptake of the Quon Euro 5 by local transport logistics companies. It is currently the largest selling Euro 5 truck in South Africa. Based on this performance, UD Trucks Southern Africa will be expanding its Euro 5 offering in the country to include the Quester and Croner. The launch of these products will take place in 2022.

This truck technology points the way forward, featuring innovation such as Lane Departure Warning System, Adaptive Cruise Control and UD stability control.

It is evident that the South African road transport logistics sector has reached a new level of sophistication over the years and is comparable to among the best third-party logistics providers in developed countries of the world.

Festo Process Automation solutions for all production levels



FESTO South Africa is taking their customers on a journey to higher productivity from Process, Electric to Pneumatic Automation. Their recently launched campaign "heart of absolute Automation 2.0" that focuses on their Process Automation solutions pilots this journey. Through this campaign, Festo will meet the industry's growing demand for increased productivity, reduced manual tasks and simplified production.

The first leg of the campaign creates an analogy between the human heart and their Process Automation solutions. The heart is at the centre of the vascular system, which is a network of blood vessels that deliver nutrient-rich blood to the brain, lungs and every part of the human body. In industry, the heart can be equated to a pump in a company's plant, as it ensures the adequate distribution of fluids, solids and powdery media in machines.

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In every Process Automation application, pressure, temperature, and flow are required to be precisely regulated as with the human body's vascular system. Festo offers actuators that are suitable for controlling the flow of media and regulating ball valves, air dampers as well as butterfly valves. These actuators are tailored specifically to meet the process industry's requirements in terms of force, corrosion resistance, and standardised interfaces. They conform to the standard ISO 5211, which defines

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Fixing CT's rail service will take more than money

Says Jacques Moolman, President of the Cape Chamber of Commerce & Industry.

ONCE upon a time, Cape Town had a fully functioning, affordable and efficient commuter rail service that allowed people living on the urban rim to travel safely to and from work in all weathers and all seasons.

The oldest branch of this network was the Cape Town-to-Simon's Town link which skirted the coastline of False Bay providing an added attraction to the City's reputation as a world-class tourist destination.

Capetonians know only too well how this wonderful service in recent years was allowed to come close to collapse, badly affecting those who relied on it most – those living on the urban edge in public housing and a growing majority in informal dwellings.

Calls to privatise the network fell on deaf ears. So did offers by the City authorities to assume responsibility for its management. Now the central government in the form of the Passenger Rail Agency of South Africa (Prasa) which falls under the Ministry of Transport have secured the finance to take action to meet the many challenges the



Living between the lines. Credit GroundUp.

network faces.

They are considerable: Theft of copper and steel, mindless property destruction, deliberate arson, bizarre graffiti on carriages, a breakdown in security and even the appearance of informal housing straddling the rails on the central line.

At one point Cape Town commuter trains were running at 34% of capacity. Prasa told the Western Cape Government that compared to 2019 when they were already on their knees due to arson attacks, theft of infrastructure, vandalism and mismanagement five out

of 12 trains operated in 2019 were not running.

The central line, once the busiest is still out of action, much of its length is covered by thousands of informal dwellings. At least 1,350 will have to be moved so that repairs can start on the central line.

Today there is hope that things will change. Not only has the Transport Ministry secured the requisite funds, but there are also signs that the antagonistic atmosphere between the City and Prasa is being replaced by a more co-operate climate.

The City has secured land to which those shacks blocking the

central line can be moved (with all the considerable delicacy that is required in such matters) and Prasa appears determined to completely secure the line throughout its length.

Prasa management skills and security issues remain top priorities and are now recognised at all levels by all stakeholders. Whether this is an informal or formal partnership no longer matters. The problem of rail commuter safety, affordability and all-around efficiency is recognised as a top priority for the citizenry, the ratepay-

ers, employers in the private and public sectors, those employed at every level in the public and private sectors and the voters – in other words, everyone.

With a new cooperative mood in addressing the problem, can we hope for a return of the Central Line with all that good it will do for the City economy? Can we see the return of the False Bay line to its former glory that will undoubtedly be once more a world-class tourist attraction?

Working together, avoiding the blame game, is the way to achieve it. Money alone will not.



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Is there a need for TES in SA's construction industry?



IT is without a doubt that many industries have taken a serious knock during the pandemic. Those involved in South Africa's construction industry had their hands tied, especially at the onset of the pandemic when restrictions severely delayed and even terminated projects. When comparing GDP growth in the first quarter of 2021 to 2020's fourth quarter, the construction industry landed at the bottom of the pile. Only beating the negatively contributing industries of electricity, gas & water as well as agriculture; the construction industry accounted for only a 0.8% contribution to South Africa's GDP growth. This is

no surprise when South African construction companies had no choice but to scale down on full-time employees in order to stay afloat. As government has changed their lockdown strategy and eased restrictions, a gap has formed in construction labour. The exciting news of developments in the industry, such as the planning of a new "smart" city located near Lanseria, Johannesburg, proves there is room for Temporary Employment Service (TES) providers to nurture the industry back to health.

Permanent, full-time employees are often ill-suited to project-based industries. While there is investment and stimulation in the construction

industry, the labour force needs to expand fast while companies try to shield against the uncertainty of the pandemic and possible project disruptions or terminations. Therefore, the approach to employment needs to be carefully honed for optimal results. Time is money, especially when construction costs rack up daily with equipment and machine hiring. TES providers can support the construction industry by offering flexible employment solutions to get projects up and running quickly when time is of the essence. However, TES providers are only excellently positioned to supply blue- and white-collar workers efficiently to construction projects

when they act within compliance.

The Temporary Employment Services Division (TESD) was established exactly for this purpose, to ensure good practice and compliance with SA labour regulations. While having members in various sectors, the TESD has a close connection to the construction industry, affiliated with the Constructional Engineering Association (CEA(SA)). When construction companies chose TESD members for TES, they can be assured that they are putting their trust in a division who knows their industry and making use of TES providers who are invested in their growth.

Rooibos harvest season begins

JANUARY marks the start of the Rooibos harvest season in Clanwilliam – a quaint town tucked away at the foot of the majestic Cederberg Mountains and the only place in the world where Rooibos grows.

Annually more than 20 000 tons of Rooibos are produced, half of which are exported to 60+ countries across the globe. Today, Rooibos makes up about 87% of SA's international tea exports of which the biggest importers include Japan, Germany, the Netherlands, UK and the US.

Adele du Toit, spokesperson for the SA Rooibos Council (SARC) says this time of the year, Clanwilliam is a hive of activity and ideal for tourists to visit and experience first-hand how Rooibos is produced.

"While Rooibos is a staple of many South Africans' daily routines, few are familiar with the fascinating process of how it is farmed.

"During February and March, tiny Rooibos seeds, which are collected by hand, are germinated in nurseries. From June to August, seedlings are transplanted to the Rooibos fields where they will grow to maturity. It takes about 18 months before the plants can be harvested for the first time.

"The Rooibos crop is harvested once a year from summer to early autumn by cutting off the branches about 50cm above the ground. These cuttings are bound into sheaves and transported to the processing yard where they are machine-cut to uniform lengths of



After fermentation, Rooibos is spread across huge drying yards to naturally dry in the sun.

between 1.5mm and 5mm. The cuttings are then bruised prior to starting the fermenting process, which will develop the characteristic colour and flavour of Rooibos.

"During the fermenting process, the cut and bruised Rooibos is dis-

tributed across huge drying yards where it is ploughed over to air.

"After watering, it is left to sweat in heaps for 10 – 14 hours at temperatures of 34°C – 38°C. The fermentation process involves oxidation, brought about by enzymes that

are naturally present in the plant. This allows the Rooibos to change from green to deep amber while developing its distinct aroma. Then it is collected by special machines and taken to the processing facility for further processing

which includes pasteurisation.

"Finally, Rooibos is graded according to length, colour, flavour and aroma, and is then sent in bulk or retail packs (teabags or loose leaf) to various packers and exporters around the world."

Du Toit says because of Rooibos' many health benefits, local consumption is increasing and with the recent registration of Rooibos as a Protected Designation of Origin (PDO) in the EU, the sector is likely to see a spike in international demand too.

"Rooibos is the first African food product to receive PDO status from the EU, which identifies and links a product to a specific region, associating its quality and reputation to that area. In Rooibos' case, it's the

Cederberg region – the only place on the planet where the climate and environment are favourable for growing Rooibos."

While the Rooibos industry currently provides work for more than 8 000 farmworkers, as well as additional employment in upstream activities such as processing, packaging and retailing, du Toit adds that the PDO registration is likely to further stimulate job creation and interest in the Cederberg region.

"The Cederberg has much to offer tourists by way of the 'Rooibos Route' where visitors can learn how Rooibos moves from farm to cup, while exploring the unique sights and sounds of the region that's a short two hours' drive from Cape Town," she says.

Filtration solutions

BMG's Fluid Technology division provides essential filtration, separation and purification solutions that improve operational efficiencies for customers in all sectors. These industries include fuel distribution, offshore and aviation services, mining, power generation, agriculture and earthmoving, as well as chemical, petrochemical and military.

"With the growing trend for diesel-fuelled equipment, we have recognised a greater demand for the supply of 'cleaner', non-contaminated diesel and lubricant oils," "The control and prevention of contamination of fluids is critical for optimum performance, improved reliability and extended service life of machinery, equipment and vehicles.

"All BMG filtration systems utilise advanced technology to ensure fluids - including water, fuel and lubricant oil - are within the required cleanliness standards. These systems comprise OMTEC ECO Blue Filters and FG desiccant breath-



OMTEC ECO spin-on elements have been designed for quick, effortless and efficient servicing of the fuel filtration system, without the need for specialised tooling, lifting equipment or elevated work platforms.

ers" states Willie Lamprecht, Business Unit Manager, Fluid Technology, Low Pressure, BMG.

"A growing area of our filtration services is in bulk fuel filtration. Self-bunded tanks, which are used on fuel farms, are fitted with our own OMTEC spin-on filters that have been specially designed for installation in the pumping compartment.

BMG's ECO spin-on elements, which consist of three spin-on cartridges and water-repellent cartridges, offer

3 - 6 Micron ratings and a working pressure of 24 Bar.

The FG breather replaces conventional dust caps or breathers often found on new equipment. When contaminated air enters the top of the breather, it passes through layered filter media, blocking particles from entering the breather, thus preventing wear to equipment surfaces. The filtered air passes through a bed of silica gel, which effectively removes moisture. Silica keeps the equipment dry by attracting

moisture from inside the equipment reservoir during service or shut-down.

FG desiccant breathers have an enlarged housing, which ensures up to 20% more absorption of moisture than conventional breathers. The centre tube is constructed from a robust nylon material, providing rigidity to the element and allowing an even air flow through the silica gel. For additional system protection, secondary filter media prevent any possible migration of silica dust.

Breathers are suitable for use in hydraulic units, where there are high humidity and temperature fluctuations. The normal hazards of condensation - rapid ageing of hydraulic oil, degradation of additives and corrosion - are prevented.

BMG also supplies FG coalescer filters, which are used in the fuel line for the efficient operation of marine diesel engines, as well as air breather filters with housings made of non-corrosive material for high efficiency and extended service life. Low pressure filters for modern hydraulic systems are fitted with glass fibre PS filter elements, with high differential pressure stability and dirt holding capacity. These modular low pressure filters ensure a minimal pressure drop through the optimal flow design.

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

FEDHASA welcomes review of national state of disaster

FEDHASA, the voice of hospitality in South Africa, has welcomed the announcement by President Cyril Ramaphosa that the National Coronavirus Command Council is reconsidering whether to uphold the current National State of Disaster.

First imposed on 15 March 2020, the National State of Disaster has been renewed since then. It allows the government to impose curfews as well as restrictions on indoor and outdoor gatherings and on the dispensation of alcohol. These restrictions have had a severe adverse effect on the hospitality industry and has led to the closure of many businesses and the loss of many thousands of jobs.

"As an industry, we have always been sensitive to the fact that balancing lives and livelihoods is a difficult task," says Rosemary Anderson, FEDHASA National Chair.

"We understand that sacrifices had to be made to curb to spread of the pandemic. However, the hospitality industry can't continue to be switched

on and off to stem the spread of COVID," adds Anderson. "There has to be a more sustainable route to follow, which does not cause more harm than the pandemic itself."

"The hospitality sector has largely borne the brunt of changing lockdown regulations, despite putting in place stringent health and hygiene protocols.

"FEDHASA calls on the Government to look at scientific evidence to rather control the spread of COVID and lift the National State of Disaster. This will assist in providing confidence for our international tourists and encourage them to visit our shores and start to rebuild that sector of tourism that was devastated by not only the restrictions, but by South Africa's red listing by so many countries."

FEDHASA would like to encourage citizens to comply with COVID protocols and to get vaccinated to avoid COVID limiting operations. It is the only way to restore some form of normality in our lives," concludes Anderson.

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The 30/10-ton maintenance crane being prepared for load test; the underslung auxiliary hoist with protective buffer above.

Very compact crane delivers higher than normal lifting height

CONDRA has manufactured and delivered a 30/10-ton overhead crane designed to marry two mutually opposing tender specifications: high lift-height and tight overall dimension.

The double-girder electric overhead travelling crane is for dragline house maintenance. A

30ton crab-mounted main hoist will service hydraulic cylinders, motors and gearboxes within the house while an auxiliary 10-ton underslung hoist executes additional duties, including external loading and unloading of equipment.

Condra delivered the machine in Decem-

ber last year.

Crane design was made complex by two customer specifications: first, the need for the main hoist to deliver a higher than normal lifting height measured as a percentage of the available vertical dimension; second, the requirement for overall dimensions to be sufficiently com-

pact to enable the working crane to move in and out of the existing crane aperture in the wall of the dragline house.

These two design requirements run contrary to one another in that a greater lift height is usually achieved by designing a physically bigger hoist working from a larger crane.

Condra's machine will clear the aperture frame with just 50 mm to spare.

The specification was met by careful design of three distinct aspects. First, the main hoist was designed around a high-tensile rope with reduced diameter, allowing a smaller rope-drum and more compact hoist. Second, smaller wheels, suitably hardened, were used on the long and cross-travels of the crane, driven by more powerful motors. Third, girder webs were made smaller and combined with top and bottom flanges of thicker steel plate to maintain deflection criteria.

"In a nutshell, we met the customer specification by designing key crane elements to be smaller but stronger," explained Condra managing director Marc Kleiner.

"All credit for a successful outcome must go to our design office, which worked hard to meet this demanding specification."

Competition for the contract was stiff. Tenders representing most major crane brands were submitted. However, Condra proved better able than rival companies to meet the complex and conflicting design criteria.

The newly delivered crane features digital load cell read-outs, remote control, lights, and a buffer to protect the underslung hoist against damage by other machinery working in the confined space of the dragline house. It joins a long list of lifting equipment manufactured by this Johannesburg-based company for mining applications over the past fifty-five years.

Condra has recently captured an increasing share of the sub-Saharan market for cranes and hoists.

Management claims the highest local content of any overhead crane manufacturer in central and southern Africa.

The product range encompasses capacities from 250 kg to 500 tons with a fully automated option offered on all machines. Manufacture is to ISO 9000 standard.

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Outlook 2022: Global oil markets

By Malcolm Melville
Energy Fund Manager
at Schroders

- The outlook for oil prices is positive as we go into 2022, with limited new supply but growing demand.
- Price of oil may increase to above \$100/bbl during 2022.
- Biggest risk is the return of Iranian barrels which would see the oil market switch to a surplus and could prompt a fall in prices towards \$60/bbl.

AFTER a surge in oil prices during 2021, market attention is now turning to 2022. Inventories will likely start the year below the five-year average, and natural gas prices in Europe and Asia significantly above long-term norms.

Unless Iranian oil production picks up meaningfully or Covid-related travel restrictions disrupt demand, oil inventories will remain low, and prices could breach US\$100/bbl in 2022. Indeed, if OPEC members continue to struggle to meet production targets, much more bullish scenarios are plausible for crude markets.

Demand set to grow in 2022

We expect oil demand to grow to 100.23 million barrels per day (mb/d) in 2022, up 3.5mb/d from 2021 and comfortably above the 2019 levels of 98.27mb/d. This is based on forecasts for global GDP growth. Additional demand for oil will come because of switching from gas to oil.

The estimates for this range from 0.2mb/d to 1mb/d from Europe and Asia where the price of gas is high enough to provide an incentive for switching. Gas prices would need to double in the US for switching to be worthwhile, so we don't anticipate any additional oil demand in the US from switching.

An additional source of demand could come from a rise in airborne freight, given the current problems with global supply chains. However, this is difficult to forecast and therefore is not included in our demand assumptions.

Supply will remain limited

If our demand assumptions prove correct, an



additional 3.5mb/d of supply will be needed in 2022 at the very least. This supply is likely to come from OPEC, Russia, and the US, with OPEC having the largest potential.

After cutting production by around 10mb/d in 2020 following a collapse in demand due to the Covid-19 crisis, OPEC+ (which includes 10 additional countries, including Russia, Oman, and Mexico) is now increasing output by 0.40mb/d per month until September 2022 when each country hits their baseline.

If OPEC production doesn't return to the baseline numbers, but instead can only return to the average production levels before Covid-19, then output will only increase by 1.2mb/d. This would be some 2.3mb/d short of the required new supply and could lead to higher prices for crude oil.

In the US, pre-Covid-19 production peaked at 13mb/d and is now at 11.3mb/d. The lack of investment over the past few years, due to significant capital restraint (as investors demand improved returns to shareholders and climate change considerations come to the fore) means that production is likely to increase by around 1mb/d to 12.3mb/d.

What are the main risks facing the oil industry in 2022?

There are three main risks to oil demand in 2022. These are: 1) if there is a return to widespread mobility restrictions if Covid-19 disrupts travel again; 2) a fall in demand from a short-term price spike; and 3) a weakening of growth due to supply chain disruption.

The biggest risk in terms of supply comes from Iran, which could increase production by around 2mb/d if relations with the West improve markedly. The exact pace and quan-

tity of this is unknown. However, given the magnitude of the potential increase and the current market assumption that limited Iranian supply is likely in 2022, the impact on price

could be significant. The increased Iranian supply would swing the balances for 2022 into a meaningful surplus.

The US has limited options on supply, but the most effective

would be a change in its energy policy to encourage more oil production in the US. However, following the recent COP26 event this would seem unlikely.

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Multi-brand approach better serves Kemach Equipment customers

TRADITIONALLY a single-brand distributor, Kemach Equipment has over the past year transformed into a multi-brand equipment solutions provider, thus providing customers with the convenience and efficiency they need

by offering multiple products and services under one roof. Following the end of its long-term dealership agreement with JCB in 2021, Kemach has adopted a multi-brand strategy that has seen the company entering into distributorship

agreements with several premium equipment manufacturers. “We felt that by being linked to a single brand we were limited to a certain extent. There are several sectors of the South African economy in which we couldn’t par-

ticipate. Previously, we were pretty much limited to the construction sector, and missed out on opportunities in the materials handling, mining and quarrying sectors, among others,” explains Les Lothian, CEO of Kemach Equipment.

Business realignment
The business realignment strategy began in March 2020 when, in partnership with Anhui HELI, Kemach introduced its Kemach Forklift range, giving the company a footprint into the lucrative mate-

rials handling market. This was followed by a distributorship agreement with McCloskey International in October 2020, which gave Kemach access to the mining, aggregates, construction and demolition, as well as recycling and infrastructure

markets. In July 2021, Kemach took over the distributorship of the full range of BULL backhoe loaders in South Africa, Lesotho and Eswatini. Leveraging an existing wide backhoe loader customer base, Lothian is adamant that Kemach will be a player of substance in the backhoe loader market in South Africa, estimated at 1 200 to 1 300 units a year.

Another strategic distributorship agreement was signed with BOMAG GmbH in August 2021, allowing Kemach to market and support the full range of BOMAG’s heavy and light machines in South Africa, Lesotho and Eswatini.

In the same month a distributorship agreement was signed to sell and support the full range of Liebherr earth-moving equipment in South Africa. The range includes excavators (20 – 100 t), wheel loaders (10,4 – 25 t), bulldozers (20 – 73 t) and a line of telehandlers.

Kemach has added the Torpedo range of hammers to its stable, effective September 2021. The range was previously distributed locally by Maximum Equipment, which remains a sub-dealer for Kemach in South Africa.

Five pillars

Lothian reiterates that Kemach is building its business around five different pillars – Kemach Forklifts (materials handling), McCloskey (crushing & screening), BULL backhoe loaders (construction), BOMAG (infrastructure development) and Liebherr, which gives the company a footprint in not only construction, but also the logistical handling of mining materials. All of these segments leverage each other, giving the business the much-needed balance.

Apart from diversification into different sectors of the economy, the multi-brand strategy also allows Kemach Equipment to offer a total solution to its customers, especially at a time when customers continue to chase the convenience that comes with dealing with a single provider for their different needs.

“We have also been very careful in selecting our OEM partners. All the products in our stable complement each other, are of the highest quality and offer true value for money,” concludes Lothian.

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WG20 is the first geared motor range to be completely developed in-house at WEG. It comprises helical, parallel shaft and helical bevel geared motors with torques between 50 and 18 000 Nm. The two-stage units excel with their large ratio range, as well as being exceptionally efficient thanks to the sophisticated design. The light aluminium housings of the geared units up to 600 Nm and the robust cast iron housings from 800 Nm provide a highly versatile and reliable product, with a wide range of possible applications. These include various conveyors, cranes, machinery for timber processing, machines for waste disposal and recycling, and bakery machines, within industries such as mining, paper & pulp as well as food & beverage among others. The motors are built with industry standard mounting dimensions to ensure interchangeability worldwide.

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and Gas sector at
Cliffe Dekker Hofmeyr

On 24 December 2019, the first iteration of the Upstream Petroleum Resources Development Bill ("UPRDB") was published for public comment. The UPRDB introduces a separation of the upstream petroleum exploration and production sector from the mining sector, which is currently both regulated under the Mineral and Petroleum Resources Development Act, No. 28 of 2002 ("MPRDA"). Written comments on the UPRDB from industry stakeholders were required to be submitted by 21 February 2020, and Government consultations with industry stakeholders were conducted by the Department of Mineral Resources and Energy ("DMRE") and the Petroleum Agency (the "Task Team") between

April and May 2020. The National Treasury issued a tax policy discussion paper on 17 December 2021, to be read alongside the UPRDB, which sets out certain key proposals on the taxation of upstream oil and gas activities.

A second iteration of the UPRDB was published on 14 June 2021, following the Minister of the DMRE's ("Minister") explanatory summary published in the Government Gazette wherein he declared his intent to introduce the UPRDB to the National Assembly. It was evident from this version of the UPRDB that the Task Team made a concerted effort to take into account the concerns raised by the industry stakeholders. The UPRDB was introduced to the National Assembly on 1 July 2021 and was tagged an "ordinary bill affecting the provinces". Consequently, it must be considered by both the National

Assembly and the National Council of Provinces.

The provisions put forth by the UPRDB are encouraging. The current draft of the UPRDB consists of comprehensive transitional provisions to ensure security of tenure of existing permits or rights by giving holders of such permits and rights an opportunity to transition to the provisions of the UPRDB.

A significant development is the introduction of the petroleum right, which governs the key terms of both the exploration and production phase. The petroleum right will replace the granting of separate exploration rights and production rights. In addition, a petroleum right may only be granted to a company incorporated in South Africa and an interest in a petroleum right must be held by a South African incorporated company. This will encourage both foreign investment and

local participation in the oil and gas industry.

A new permit is introduced by the UPRDB, namely the retention permit. A retention permit is granted in cases where development and production of petroleum is not possible due to unfavorable market or economic conditions. The retention permit would suspend the terms and conditions of the petroleum right so as to allow the holder to wait for a positive shift in market conditions, prior to making an investment decision.

The UPRDB proposes two methods for the acquisition of permits and the petroleum right, namely, (1) applications-by-invitation and (2) unsolicited applications. Applications-by-invitation is then subdivided into a further two methods namely, (a) competitive administrative licensing rounds or (b) open licensing rounds, both of which are initiated



by the Minister.

Under the provisions regulating competitive administrative licensing rounds, the Minister may invite applications for a petroleum right in respect of a specific block/s by Government Gazette, and assess each application based on the holders technical and financial ability, and compliance with the prescribed criteria. Open licensing rounds, whilst also initiated by notice in the Govern-

ment Gazette, will be processed on a first come first serve basis.

An unsolicited application only applies to applications for reconnaissance permits, which can be submitted at any time, without the need for the Minister to publish an invitation.

The oil and gas sector has the potential to contribute to the much-needed boost to the South African economy as well as improve energy secu-

rety for the country. Whilst rich in its natural resources, South Africa faces severe energy poverty, and we are therefore encouraged by the European Union's recent proposal to label natural gas as a 'green' energy source in the movement toward a just energy transition. This proposal, coupled with the legislative certainty the UPRDB brings, will undeniably contribute greatly to our economy.

Accurate detection of high-pressure cleaning

- Robust housing for high-pressure applications up to 200 bar
- Resistant to cleaning agents thanks to stainless steel components
- Flexible: IO-Link, analog, switching and frequency output
- Integrated temperature sensor saves hardware costs
- IO-Link enables documentation of cleaning processes



Fast and pressure-resistant

When documenting cleaning processes and high-pressure applications, the mechatronic measuring principle with its fast response time is the first choice. The integrated temperature sensor and the versatile diagnostic functions via IO-Link save both additional hardware costs and maintenance costs. Moreover, the use of a stainless-steel housing makes the sensor resistant to standard cleaning agents.

Documentation of cleaning processes

All measured values can be transmitted to the controller in digital form, without any conversion losses, via IO-Link. Flow and temperature values can thus be easily documented for each cleaning process.

Further advantages and customer benefits

Fast response time

The mechatronic measuring principle is characterised by an extremely fast response

time allowing for even short spray bursts during the high-pressure cleaning process to be precisely recorded in terms of quantity.

No inlet and outlet pipe lengths required

Confusion and air bubbles have no influence on the measurement. This allows the sensor to be installed anywhere in the piping system.

Turbulence and air bubbles do not impact the measurement. This allows for the sensor to be installed anywhere in the pipework.

Application example

With IO-Link, monitoring of a high-pressure cleaning system, including documentation of the cleaning processes, can be implemented easily and quickly with little hardware costs, for example for use in modern slaughterhouses. ifm offers all the required hardware and software components to also provide supermarket chains, among others, with the requested transparency.

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THE BEE IN MY BONNET COLUMN

Eating up recycling

The Editor investigates!

MOST dutiful citizens that receive a waste collection service are requested to sort their household refuse into two bags – in my own case, a clear plastic bag for recyclables such as plastics, paper, metal (usually tin cans) cardboard etc., and a black bag for everything else. Diligent householders will have noticed that since the implementation of the collection of the recyclables, the trash in their black bags has diminished considerably.

I understand that the City intends to introduce a three bag system this year to complement the existing two – for vegetable matter, peelings, food scraps etc. which will then be transported to a composting centre

which can be run by enterprising emerging contractors. (This Provincial initiative was covered in the front cover story in CBN May 2021.)

Excellent initiatives – a) to recover and recycle whatever we can as part of a (responsible) circular and sustainable economy b) to recover valuable nutrients from vegetable matter whilst creating employment opportunities and c) to minimize the filling pressures on our landfills which are rapidly running out of space.

One would have thought that those with a lot more waste to dispose of, and who could, would be at the forefront – sorting their precious left overs into easily demarked bags

or skips for responsible onward treatment...

This doesn't always seem to be the case.

Driving down Stadler Road in early January, in the normally picturesque suburb of Bloubergstrand, my onward path was blocked by a City refuse truck, going about its business in collecting roadside bins and through an ingenious mechanism, upending their contents into the waiting jaws of the compaction truck.

Very efficient I thought until we were stopped alongside the only restaurant in that one way street.

While a normal household has one black bin, this restaurant had perhaps 20 or more – the contents of which were up ended into the waiting jaws of

the compaction truck, and then onward to the landfill.

It was clear from sight and sound that the black bags within the bins contained considerable amounts of glass – the rocket scientist in me deduced that they were probably beer and wine bottles. Loosely attached were large amounts of cardboard packaging materials – aha – cartons for transporting wine, beer and other beverages, Sherlock!

Wondering why an establishment that handles so much recyclable material are apparently not recycling, I first approached the City's Solid Waste Department to get some clarity on the matter.

Alderman Grant Twigg is the head of the

Solid Waste department and during an interview he explained the importance of the City's recycling initiatives and the pressing need to divert waste from the City's landfills which have an expected life of just 10 years at current rates of disposal.

He said the City operates 27 sites where recycled materials can be dropped off by contractors and responsible citizens.

He advised that the byelaws state that businesses must sort at source and engage with an accredited contractor for the removal of recyclable waste – which would particularly apply to restaurants. These requirements are made clear to business owners

and form part of their licencing contract with the City. A team of inspectors randomly check for compliance, but he stated that in preference to issuing fines for non-compliance, his department prefers the consultative and educational approach. This is particularly the case following the COVID lockdown which has hit the hospitality industry particularly hard. So much so, said Alderman Twigg, that certain byelaws were being reviewed.

So it is clear that restaurant owners have to sort at source and separate recyclables (and food waste) into skips or bags and have to have this removed and disposed of by an accredited contractor,

no doubt at a cost.

As of the time of writing I have been unable to contact the manager of On the Rocks in Stadler Road for comment but a right of reply is offered.

It was refreshing to be able to discuss the matter with a responsible City official in a frank and open conversation, unlike the response received from the Spatial Planning and Environment department, who have refused me an interview opportunity to discuss the prevalence of the number of unfinished buildings in the City.

One in particular which has remained in that state for more than 15 years.

Eish

An intelligent approach to ransomware

By Kate Mollett,
Regional Director at
Commvault Africa



GLOBALLY, ransomware is predicted to cost organisations across the world \$10.5 trillion annually, driven by growing connectivity and increasingly sophisticated attacks. Between January 2020 and June 2021, which was when the majority of countries were in lockdown due to Covid-19, there were an estimated 71 billion ransomware attacks on remote access devices.

This equates to 1.3 million attacks every second. A successful breach not only results in lost data, but often also leaked data, which is a threat to reputation as well as a compliance problem. Ransomware is a major risk for business today, and an intelligent approach is essential in countering the threat.

An intelligent approach

One of the biggest mistakes businesses make is treating ransomware and other cyber threats as IT problems, when in reality they are business issues. A successful ransomware attack can negatively impact business resiliency and cause significant business problems down the road. Cyber threats need to be treated as any other disaster,

and planned for accordingly. Following an approach centred on data governance, which aligns the value and the risk of the data with business objectives, can go a long way toward ensuring a more successful strategy for mitigating the risks around ransomware.

It is also important to understand that there will be trade-offs with privacy and security. They are not the same thing and they do not have the same goals, but they are both aimed at achieving a safety net around the use of private data for legitimate business purposes. A mindset centred on risk management, based on a thorough assessment of vulnerabilities and threats can help businesses to effectively balance the impact of a

disaster and the probability of an attack. This includes standard methods for managing data, such as reduction, transfer and retention techniques.

Automation is key

While developing policies around data governance and educating people as to the threats and the risk are essential steps, these cannot be implemented effectively using manual processes.

Today, with the explosive growth of data and how it is fragmented across many locations, providers and jurisdictions, you need to automate, and technology is your friend. However, automation alone is also not sufficient.

It is critical to have an incident response and recovery plan that

involves all of the relevant stakeholders, and to regularly test this plan to ensure it is effective and that everybody is aware of their role. This helps to align the preventative measures with business strategy. In addition, all decisions, actions and processes need to be fully documented and audited, to simplify eDiscovery and ensure legal liability is minimised.

Safeguard your critical and sensitive data

The heart of an intelligent approach to ransomware is to safeguard critical and sensitive data to mitigate risk. It is advisable to manage data within a data governance and cybersecurity framework, based on the risk profile of the data,

identify, assign and prioritise data across the environment, and then ensure critical data is available and sensitive data is protected. Availability objectives need to be based on business impact, while sensitive data should be assessed for data sprawl and any gaps in data stewardship.

Backups are the source of recovery for any incident, and they must be architected to build immutability into the structure, with air gapping and other best practice techniques, so that they can be trusted in the event they are needed. Permissions are also critical, and only the right people should be able to access, delete and modify critical and sensitive data. In addition, networks need to be monitored for anomalous behaviour,

so that incidents can be investigated and responded to before they can cause significant harm.

Comprehensive, intelligent data protection

The right tools for the job can dramatically simplify data governance, protection, backup and recovery, while ensuring data security, compliance and transformation, and facilitating data insight to drive competitive advantage. Taking advantage of next-generation technology solutions can help businesses in their quest for an intelligent approach to identify, protect, monitor, respond and recover. This is key in mitigating the risks of ransomware in an increasingly connected world.

Think before you scan – QR codes are a potential cyber risk

By Simeon Tassev, MD
and QSA at Galix

QR codes are nothing new – they have been around since 2004 – but with the increased availability of smartphones, which can scan these two-dimensional barcodes with their built-in cameras, QR codes have become increasingly popular. They can be used to make payments, download menus in restaurants, for general marketing purposes and a multitude of other applications. They can also be used by cyber-

criminals and malicious actors to steal personal and payment-related information, so it pays to be a little more aware.

Convenience is the killer

QR codes are, by design, incredibly user-friendly. These days, we see them everywhere. They are on the back of consumer products, and we can scan them to get more information. They are in restaurants so we can scan them to view the menu without touching a physical menu card. They are used to enter

competitions, in children's books to access online content. They are also used by various apps to allow small business vendors to accept credit card payments.

The risk is that, while smartphones can read the QR code, humans cannot, so we have no idea where the code will direct us to. We could easily be clicking on an infected link, a spoof website, or even just paying the wrong vendor. Opening a QR code could trigger an executable file or potentially malicious code, which can then be used

by cybercriminals to steal personal information, including payment data.

Think before you scan

The issue here is not with the QR codes themselves, or with the payment apps, because these are both secure and mature technologies. The trouble is that QR codes are easy to generate – this can be done for free online – which means that genuine codes can easily be replaced by fake ones, leading people to links that look legitimate, or

that are legitimate but send payment to the wrong vendor.

For example, at a market, vendors will have QR codes to scan and pay, but they often have strange names, or multiple businesses use the same payment application code. This makes it very easy for a malicious actor to replace the real code with their own, effectively stealing money from these vendors. Similarly, QR codes for downloading menus, entering competitions or other marketing exercises, can easily be replaced by fake

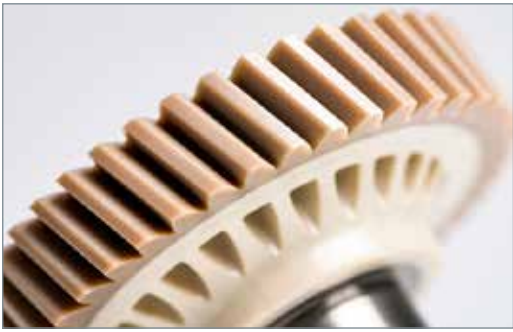
codes that look real, but lead people to infected links or spoof sites where personal information is voluntarily entered and then stolen.

Be aware of the risk

The biggest risk around QR codes is that we use them in scenarios where we are not necessarily paying attention to, or thinking about, cybersecurity. They are easy and convenient, and even children can use them. However, they can also be abused, so we need to be aware of the risk.

If possible, verify the payment before you process it – check with the vendor that you are paying the right person, visit links directly through your browser, or use an alternate method where possible. Have endpoint security on your devices to protect you from malicious content. Most of all be mindful. QR codes are fun, easy and convenient, but they are vulnerable to abuse, and we need to be aware. You wouldn't just click a link in an email without checking, so why scan a QR code without verifying it first.

Plastic gears used in mass balance transmission



FOR the first time, VESTAKEEP® PEEK plastic gears are being used in a mass-balance transmission. Evonik has developed a PEEK moulding compound (polyetheretherketone) with very good tribological properties and high durability for use in the harsh environment of an internal combustion engine to replace metal gears. The series component is manufactured by IMS Gear SE & Co KGaA and is used by Mercedes-Benz AG in various models.

Mass balancers ensure the smooth running of an internal combustion engine by reducing the vibrations caused by the pistons on surrounding structures. Mass balancer gears come into

contact with engine oils and are therefore exposed to maximum temperatures of up to 130 °C. Until now, only metal gears have been used in this environment.

Less friction, lower energy consumption, lower costs

With VESTAKEEP® PEEK 5000 G, Evonik offers a suitable material with high resistance and high performance to replace these metal gears. In addition to the required vibration damping, plastic gears offer an additional advantage of high resistance to mechanical and tribological stress.

Compared to conventional metal gears, they have lower friction losses and are

significantly quieter. The lower mass moment of inertia saves energy. Gears made of VESTAKEEP® PEEK are manufactured cost-efficiently by injection molding and eliminate the extensive reworking that was previously necessary when using metal.

With the use of its own gear testing rig, Evonik supports development activities during close coordination with the customer. "We can generate specific material data that can be used to optimally design the gears made of our high-performance plastics," says Philipp Kilian, Head of Tribology Development Polymers at Evonik, describing the advantages. "We can test in a temperature range from -20 °C to 260 °C, both in dry and lubricated condition."

Dr. Steffen Kanzler, who is responsible for VESTAKEEP® for Transportation at Evonik, considers the use of the high-performance plastic under the difficult

conditions of a mass-balance transmission to be another step in the material's success story: "We are demonstrating the extraordinary properties of VESTAKEEP® here. These are also relevant for other challenging applications, where we are the suitable development partner for new projects. Our customers receive qualified support from the material selection and computer assisted simulation up to the technical implementation by our application technology team."

Thanks to their high temperature, chemical resistance and high ductility, the high-performance polymers of the VESTAKEEP® brand can replace metal components, for example, to enable sophisticated lightweight construction applications. Evonik has more than 50 years of experience in the development and production of high-performance plastics. The extensive product portfolio includes solutions for almost all industrial applications.

Lifting of local lockdown sees rise of the 'risk investor'

IN March 2020, the longest bull market in history turned bearish, with market sentiment swinging aggressively towards pessimism. While the global stock market recovered quickly, the South African economy found itself in a decided downturn, exacerbated by the imposition of various lockdowns throughout 2020 and 2021. The 2021 Schroders Global Investor Study has found that as a direct result of the lifting of lockdown, and in the face of continued economy uncertainty, more than a third of South African wealth investors are exhibiting riskier investment behaviour.

South Africans take greater risks to compensate for uncertainties

This is the opinion of Kondi Nkosi, Country Head for Schroders in South Africa, who elaborates: "A snapshot of the data from the study reveals that in the wake of the pandemic, South African wealth investors will allocate more of their money towards their savings and low-risk asset classes. However, 39% of respondents claim that high-risk investments make attractive prospects now that 'permanent' lockdowns have been lifted. This is particularly true of younger generations."

These results are demonstrative of the

fact that for many investors, the economic instabilities that have come to characterise present-day South Africa are compelling enough to justify taking greater risks – perhaps to compensate for the uncertainty.

Millennials display the biggest appetite for risk

According to the study, the appetite for high-risk investments is the highest amongst the 18-37 age group, and decreases notably as the age bracket increases. Amongst South African respondents, millennials (22-41 years old) demonstrated the most significant inclination towards risk. Older generations are the most risk averse. Few would have the appetite to stake their retirement savings on high-risk asset classes in times of increased market volatility.

Along with the appetite for higher risk comes a willingness to break into new sectors and assets for the first time. These new markets include electric vehicle-related stocks and funds, biotech, internet and tech-related stocks and cryptocurrencies. In this regard, the South African data mirrored the global outlook.

As Nkosi explained: "Historically, investments into real estate and commodities attracted the most investment but during

the final stage of the Study, we saw South African interest in internet and tech company stocks increase to 54%. We also saw 70% of South African respondents investing in cryptocurrencies like Bitcoin, Ethereum and Litecoin. Given the extreme volatility of crypto assets, it's of no surprise that it's highly represented."

Young investors are bullish but returns weigh on their mental wellbeing

Presented with the scenario in which interest rates are at zero or negative, 53% of South African wealth investors aged 18-37 said they would make higher-risk investments in pursuit of returns, while roughly half of that percentage would be more likely to spend and less likely to save. This is despite 71% of this age group stating that the performance of their investments has an impact on their mental health.

"We need to see these findings in the context of record-low interest rates in South Africa and indeed, throughout the rest of the world. Although the lifting of lockdowns has had a definite effect on investors' appetite for risk, low interest rates have also helped to restart the decade-long bull run that emerged post-financial crisis and contributed to the rise of the risk investor," Nkosi expanded.

Historic contractor's framework targets women and youth

THE Western Cape Department of Human Settlements (WCDHS) has launched its contractor's framework which targets particularly women and youth contractors.

This initiative, which is a first of its kind in South Africa, invites bids from Historically Disadvantaged Individuals (HDI) Engineering and Construction Contractors to participate in a Framework Agreement with the WCDHS. This agreement will be applicable for a period of three (3) years. This means that all those with successful bid submissions, are placed on the framework, where should they meet all the relevant criteria for a specific contract, would then be able to submit quotations for that contract.

The scope of engineering and construction work for the purpose of the implementation of Human Settlements Infrastructure Delivery, may fall within one (or more) of the following classes of construction work:

- General Building (2GB to 7GB)
- Civil Engineering (2CE to 7CE)
- Electrical Engineering Works – Building (2EB to 7EB)
- Electrical Engineering Works – Infrastructure (2EP to 7EP)
- Landscaping, irrigation and horticulture works (2SH to 7SH)
- Steel security fencing or precast concrete fencing (2SQ to 7SQ)

This framework has strict conditions, which should be met in order for a contractor to bid. Amongst others, these include:

- 51% women ownership,
- 51% black youth ownership and
- 51% black ownership by people living with disabilities.

Western Cape Minister of Human Settlements, Tertius Simmers said: "I'm excited about the launch of this framework, as it demonstrates our continued commitment

to empowering our historically disadvantaged individuals. We've already shown that we invest in the empowerment of our contractors, by spending more than 50% of our Human Settlement Development Grant on their development. With this historic initiative, we're taking it a step further, as this will ensure that more contractors have access to these types of opportunities."

The framework which opened on Friday, 21 January 2022, closes at 11:00am on Friday, 25 February 2022. All those interested in bidding can collect the tender documents from the 6th floor at the Western Cape Department of Human Settlements, 27 Wale Street, Cape Town or the 2nd floor, Department of Human Settlements, York Park Building, York Street, George, from the Supply Chain Management Procurement office.

Any further queries around the tender procedure can be directed to Ms E Pillay on 021 483 3173 or email Esther.Stephanus-Pillay@westerncape.gov.za or Ms S July; email Simthandle.July@westerncape.gov.za

Queries around technical aspects may be directed to Mr. Sandile Gqoboka, on 021 483 3973 or email sandile.gqoboka@westerncape.gov.za

Minister Simmers added: "I'd like to encourage all those who meet the various criteria to use this opportunity and make submissions. We've specifically opened this door to this group, so that those who might not have had an opportunity before, can now also be part of this exciting process. We will not cease in empowering our people, as this leads to greater job creation and economic growth, which is a key priority for the Western Cape Government."

The physical address for the closing of bids are: Tender Box, Ground floor, Western Cape Government Department of Human Settlements, 27 Wale Street, Cape Town, or 2nd floor, Department of Human Settlements, York Park Building, York Street, George.

VW Group SA named Top Employer for 11th consecutive year

IN recognition of their dedication to providing an excellent and progressive work environment for all its employees, Volkswagen Group South Africa (VWSA) has been named as a Top Employer for 2022. This is the 11th consecutive year that VWSA has been awarded this accolade.

The Top Employer title is an internationally recognised certification from the Top Employers Institute, which is awarded in recognition of employers around the world that provide excellent conditions for their employees. Included in the considerations is the company's commitment to employee wellbeing,

continuous improvement and to developing talent within the organisation.

The list of Top Employers for 2022 was announced during a virtual ceremony held on Thursday 20 January. A total of 1 856 companies worldwide were certified as Top Employers, including 113 recipients from South Africa.

Criteria for the certification range from learning and development initiatives, company culture, workforce planning and compensation and benefits. In order to achieve their Top Employer certification, VWSA participated in a rigorous assessment, which

includes an intensive survey of the company's people practices as well as an independent audit. VWSA scored above the benchmark standard for the certification in various criteria, including the areas of Business Strategy, Leadership, Values and Ethics, Sustainability, and Diversity.

"It is a badge of honour to receive this certification for the 11th year in a row," said Robert Cisek, VWSA Chairman and Managing Director. "At VWSA our people are a priority, and this accolade proves that our company culture and value proposition to employees reflect that priority, consistently."

Shoprite - selling only locally-produced sugar

THE Shoprite Group have partnered with SA Canegrowers on its Home Sweet Home campaign to encourage South African consumers to buy locally-produced sugar.

This partnership will see the Shoprite Group, which is Africa's largest retailer, prioritising selling only locally-produced sugar in its 1 189 Shoprite, Checkers, Checkers Hyper and Usave supermarkets in South Africa, and promoting the Home Sweet Home campaign to its customers.

SA Canegrowers launched its Home Sweet Home campaign on 9 December 2020 with the aim of educating

consumers about the threats the local industry is facing when it comes to the influx of cheap sugar imports and to encourage them to buy locally-produced sugar in order to safeguard rural jobs.

In January 2022, the Shoprite Group have rolled out in-store advertising in the sugar aisles of all their stores that encourages consumers to buy local sugar. Given Shoprite's extensive footprint, the partnership is a significant development for South African canegrowers and the one million people they support. Its involvement will enable the Home Sweet Home message of buying local sugar to



reach more consumers and help protect South African jobs and livelihoods.

The sugar industry has faced serious challenges over the past decade including

droughts, increasing production costs, falling world sugar prices, and the intro-

duction of a sugar tax. A major threat is weak trade protection against increasing sugar imports, which cost the local industry more than R2.2 billion in 2019 alone.

These challenges have threatened 21 000 small-scale growers, 65 000 direct jobs, 270 000 indirect jobs, and the one million people the industry supports.

This is why the Sugar Industry Value Chain Masterplan was developed by government, the sugar industry and other key stakeholders in order to ensure the long-term sustainability and profitability of the sector. Under the Masterplan, retailers have committed to procuring at least

80% locally-produced sugar by the end of the first year of the plan's implementation. SA Canegrowers is an active participant and fully supportive of the Sugarcane Industry Value Chain Masterplan.

SA Canegrowers Chairman Andrew Russell said: "We welcome the Shoprite Group's efforts to achieve this target, including partnering with us on our Home Sweet Home campaign. We hope to see more retailers and other industry stakeholders follow Shoprite's example and commitment to helping us secure the future of the industry and its workers."

Municipal-focused recycling strategy

POLYCO, a producer-responsibility organisation (PRO) for the plastic industry is launching a municipal-focused recycling strategy, aimed at drastically improving the country's recycling rates. To implement this 'first of its kind' strategy, Polyco will be working with municipalities to invest in recycling infrastructure, innovation, and to implement consumer education and awareness campaigns. Polyco has partnered with the Buffalo City Metropolitan Municipality (BCMM), Bor-

der-Kei Chamber of Business (BKCOB) and the Buffalo City Development Agency (BCMDA) to implement this recycling strategy in East London.

"Through this consortium, we have funded local recycling businesses within East London to facilitate the collection and recycling of material," says Patricia Pillay, Chief Executive Officer at Polyco. "There is a growing demand for recyclate across industry in South Africa, and by improving collection facilities, recycling

infrastructure, and by influencing consumer behaviour towards recycling, we can ensure that we start meeting the demand for recyclate."

In conjunction to funding support for recycling businesses, a community-focused recycling initiative has been welcomed by residents in East London. The Packa-Ching recycling project encourages residents to collect their recyclables and bring them to a buy-back centre, where they will have their recycling weighed and then will

be paid for it. This is an easy-to-use system that makes recycling and its rewards accessible to many. To support Polyco's recycling strategy in Buffalo City Municipality, two Packa-Ching buy-back sites have been established, along with a wide-spread public education and awareness campaign.

"Many municipalities face similar pressure with available landfill space quickly diminishing and increased pressure from national government to improve recycling rates," says

Pillay. "Our municipal-focused recycling strategy focuses on collaboration with municipalities and local businesses to improve local product value-chains and to positively influence consumer behaviour towards recycling different materials. As an industry-PRO our focus is on repositioning plastic waste as a valuable resource, and we do this by working with stakeholders along product value-chains, to see how we can improve the adoption of recycling."

"Polyco is ready to work with other munic-

ipalities to implement our recycling strategy," says Pillay. "Every municipality has unique social, economic and environmental conditions, and our Packa-Ching recycling project has proven to be adaptive

and successful across many different communities. Our recycling strategy is an extension to this, aimed at establishing recycling infrastructure and changing people's perception regarding the value of waste."

About Polyco

Polyco is a registered PRO in South Africa. In response to recently introduced waste management regulations, Polyco has made the decision to broaden its focus to all plastic types under extended producer responsibility (EPR) regulations. This decision has been made to increase its support to producers to manage their products' life cycle responsibly.

Survey sends positive signals to SA pork industry

A new survey has proven that while consumers are increasingly considering sustainability as a key factor in making purchasing decisions, price and convenience remain king – trends which bode particularly well for the South African pork industry moving into 2022.

According to PwC's December 2021 Global Consumer Insights Pulse Survey, more than half of the 9 370 individuals surveyed reported that they were more eco-friendly than six months ago. But of these respondents, 68% of in-store shoppers reported that they continue to actively seek the best deal compared with 42% who actively search for eco-friendly and sustainable products.

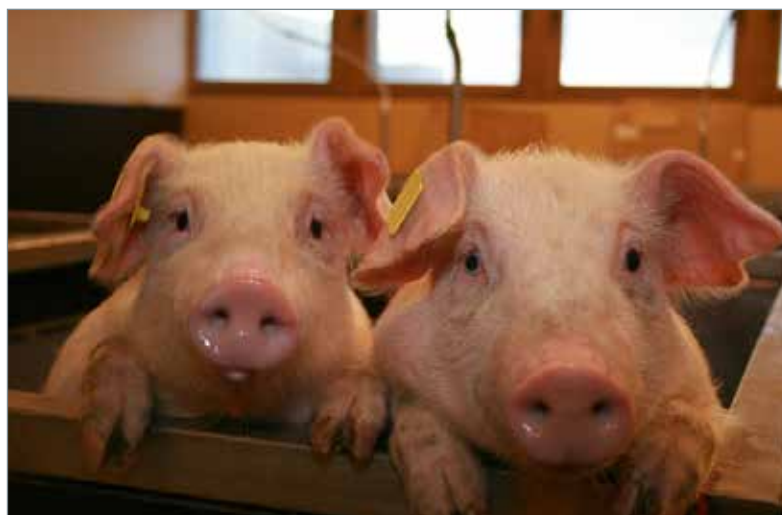
"Notably, however, compared to other forms of protein, pork remains a top competitor in all three categories, offering the ben-

efits of affordability, accessibility, and sustainability in addition to its great taste and versatility," says Eskort Chief Executive Officer Arnold Prinsloo.

"As households globally come to appreciate its relative advantages, this could finally place pork at the top of shopping lists where it belongs in a win-win for consumer health and wallets, as well as the environment."

More bang for your buck

Skyrocketing electricity, fuel, and animal feed costs have seen food prices soar in recent months, placing an even greater burden on consumer budgets in addition to the financial impacts of COVID-19 and an anaemic economy. As holiday demand kicks in, further boosting prices, the costs of beef and lamb will therefore be prohibitively expen-



sive for many households this coming festive season, notes Prinsloo.

"Against this backdrop, pork remains an attractive, pocket-friendly alternative, available on average at just two-thirds of the price of beef and less than half the price of lamb or mutton."

Furthermore, pork prices have even fallen over the past 12 months, with a recent Standard

Bank Livestock report indicating that pork has shed some 7.8% year-on-year.

Moreover, amidst growing consumer focus on healthier diets and lifestyle choices, pork also offers an important source of high-quality protein brimming with essential nutrients.

Much like other meats, there are both fatty and lean pork cuts available to suit your

taste and diet preferences. Significantly, however, lean pork cuts such as tenderloin, loin chop cuts and sirloin roasts offer comparable calories to skinless chicken breasts, and are also rich in crucial amino acids which assist in muscle maintenance and performance.

"This is precisely why pork is a protein of choice for athletes, patients recovering

from surgery, or anyone seeking to boost their energy and maintain their long-term health," he explains.

"With pockets under pressure, it's vital to recognise that as a protein, pork punches far above its weight. As we look forward to 2022, we therefore hope to see an increasing number of consumers make the switch from beef and lamb, with benefits for overall health levels."

The future-forward choice

In terms of sustainability, studies have shown that the environmental impact of producing pork is comparable with poultry and eggs. By contrast, beef is estimated to produce five times the heat-trapping gases per calorie such as methane and carbon dioxide, and requires as much as 11 times more water.

"This is particularly

meaningful in a water-scarce country such as South Africa, placing less demand on vital natural resources. Additionally, as consumers place increasing emphasis on conscious purchases, pork represents an easy, sustainable substitution for reducing the environmental footprint of food production, with positive implications for the growth of the local industry.

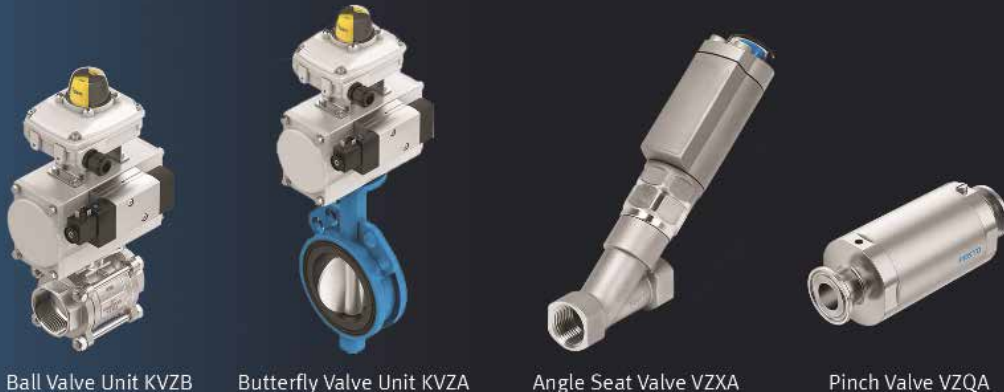
"Ultimately, we believe that these factors will result in an uptake in demand during 2022, as consumers recognise the benefits of pork both for themselves and their families, as well as its advantages as a gift to the environment. While we have all suffered a difficult two years during the pandemic, I believe that the future is bright, and that as an industry, we can look forward to a more positive year ahead," concludes Prinsloo.

Festo Process Automation solutions for all production levels

Continued from P1

The heart of absolute Automation 2.0

FESTO



Ball Valve Unit KVZB

Butterfly Valve Unit KVZA

Angle Seat Valve VZXA

Pinch Valve VZQA

the interface between the quarter-turn actuator, process valve and NAMUR VDI/VDE 3845. Their actuator's sturdy, corrosion-resistant design is ideal for use in harsh and explosive ambient conditions. They are also suitable for water/wastewater, beverage, pharmaceutical and general Process Automation applications.

Valves that keep media moving

The human body consists of valves that ensure that blood and oxygen are flowing in the right direction. Festo valves such as the Angle Seat Valve VZXA, and Pinch Valve VZQA ensure the smooth flow of

media in the plant as in the human body. Furthermore, these valves determine the dynamic response and withstand high dynamic forces. Their valves are sturdy, durable and reliable, just like healthy valves in anatomy. Festo has always been committed to a high standard of quality valves. They supply valves with up to 100 million switching cycles. These valves can be used in all industry segments, typically the food and packaging industry, automotive, electronics amongst others.

Configurator tools to create your flow

The Festo configurator tool for process

valves makes selecting the right solution easy and less time-consuming. A task that used to take a few hours now takes minutes to complete. This configurator tool has made finding, selecting, sizing and ordering the perfect Ball Valve Unit KVZB or Butterfly Valve Unit KVZA simple with just a few clicks.

These valve units control the fluids across a wide range of temperatures and pressures. In the human body, they can be compared to arteries that ensure that healthy blood is distributed to the body tissues.

The company aims to propel their Process Automation customers

to thrive even during unpredictable periods. They continually analyse the value creation chain and communicate with their customers to understand their needs. This is why their Process Automation campaign products cater for all the individual levels of the automation pyramid, from the operating level to the field level. Festo solutions ensure that their customers never miss a beat through reduced downtime and increased efficiency.

For more info on the Festo Process Automation solutions, contact marketing on 08600 FESTO (33786) or email marketing.za@festo.com

Latest control components include air grippers and solenoid valves



SMC, known for its pneumatic and motion control components, recently released four new devices to their library of control components.

Low Profile Air Gripper

One of SMC's new components includes an air gripper. Pneumatic grippers are a common device installed on robots or tooling for gripping parts. The gripper needs to physically control the part accurately and securely while being moved by a robot or other motion devices.

The MHF2 series has a unique feature of roughly 1/3 the size of a comparable gripper (MHZ2 series). This space-saving feature allows for reduced weight and can be used with low-profile end effectors. The MHF2 has a height of only 25mm. A comparable model is 72.8mm in height.

The gripper comes in three stroke lengths; 8-20mm, 16-40mm, 32-80mm, and four bore sizes; 8mm, 12mm, 16mm, 20mm. With the shorter stroke models, a special actuator position sensor is offered, which reports an analogue signal for gripper position. The position sensor also uses IO-link technology to reduce the need for special analogue cards in your control system.

Pulse Valve

A pulse valve is a diaphragm-based valve primarily used with dust collection systems to aid in cleaning the filter medium. The valve is used to pulse compressed air into the filter bag system causing shock waves through the filter and knocking the loose dust off the filter bags.

Typically these valves will use a spring to help the diaphragm move between the open and closed positions. The JSXFA series doesn't

contain a spring and is tested for 10 million cycles. The valve is easier to maintain with the springless design and has a 45% increase in the OFF response time.

The new immersion-style valve allows the valve to be installed directly on the vessel, virtually eliminating the need to weld to tank piping. This series valve comes in three different styles; compression fitting, direct piping, and immersion.

Compact 5-Port Solenoid Valve

A solenoid valve is a method to control compressed gasses using an electrical signal from a control system. The five-port feature allows the user to supply air on one side and return on the other.

Typically, a 5-port valve would be used to control a pneumatic cylinder. When supplying air to the extended side of the cylinder, the retract side can be vented and vice versa for retracting.

The JSY series valve has been reduced in size; a 6.4mm width valve can drive a cylinder bore size of 32mm. This can reduce the overall footprint of robot grippers and machine tooling used in automation machinery.

3-Port Solenoid Valve

Solenoid valves are used widely in automation. They allow control system designers the ability to move parts or grip parts securely and accurately. A common problem with solenoid valves is where to place them within the machine. Valves work best when placed as close to the working device as possible, but the space constraints do not always allow a valve to be placed close to the cylinder.

The V100 3-port valve is a micro-sized solenoid valve with low power consumption and low-temperature rise from the coil. The U-type is the newest addition to the series and has a Sonic Conductance C-value of 0.16 at 0.35W.

The heart of absolute Automation 2.0

FESTO

Join us on a journey to higher productivity through our innovative Process, Electric and Pneumatic Automation solutions. Our journey starts with Process Automation solutions that cater for all your requirements from operating to field level. With over 4 500 Process Automation solutions, we will make sure you don't miss a beat!



Contact us

Tel: 08600 FESTO (33786)
Email: sales.za@festo.com
www.festo.co.za

What is SAQCC Gas?

SAQCC Gas is Non Profit Company that has been formed by the four (4) Member Associations to establish a central database which displays details of registered and authorised Gas Practitioners to work on gas and gas systems. The SAQCC Gas has been officially appointed and mandated by the Department of Employment and Labour to register gas practitioners, on their behalf, within the following gas industries:

- Natural Gas
- Liquefied Petroleum Gas
- Air Conditioning and Refrigeration Gas
- Compressed Industrial and Medical Gases

The Member Associations are:

- LPGSA – Liquefied Petroleum Gas Association of South Africa
- SACGA – Southern Africa Compressed Gases Association

- SARACCA – South African Refrigeration & Air Conditioning Contractors Association
- SAGA – Southern African Gas Association

The practitioners that “REGISTER” with SAQCC Gas, belong to different Associations and could be members of those Associations. Registration is compulsory in terms of the OHS Act specifically concerning the Pressure Equipment Regulation (PER).

SAQCC Gas is responsible for ensuring that anyone working on Gas Systems, is competent to do so in terms of the PER. Applications for registrations are sent to SAQCC Gas by each Association according to registration criteria and proof of competency, through a portfolio of evidence relating to training, qualifications and experience in the relevant Gas industry. Approved applicants are then REGISTERED with SAQCC Gas and their details

“All of our authorised practitioners will now be in possession of the new SAQCC Practitioners card.”

are incorporated onto the National Database for Authorised Practitioners.

This database is now available online at <https://saqccgas.co.za/> allowing you to find a competent Gas Practitioner and to check the credentials of persons that are offering to provide gas services.

Authorised practitioner cards

All of our authorised practitioners will now be in possession of the new SAQCC Practitioners card. On the front of the card is the practitioner's identity photograph. The reverse of the card includes a list of qualifications and the logo of the Department of labour.

Register your school for the IITPSA Talent Search

CAREERS in Information Technology (IT) are interesting, rewarding, and offer opportunities in a wide range of sectors. However, the global IT industry has skills shortages in many specialisations, meaning a skills pipeline of young IT professionals is urgently needed for organisations to progress into the 4th Industrial Revolution.

So says Admire Gwanzura: President of the Institute of Information Technology Professionals South Africa (IITPSA), who was announcing the 2022 Talent Search – a fun challenge for learners that helps identify those with computational thinking skills.

Gwanzura says: “Information technology (IT) has evolved and grown over the years. The growth of the sector has experienced an increase in opportunities for young professionals across many exciting areas such as cyber security, app development,

cloud computing, robotics, artificial intelligence and much more. With the right IT qualifications and skills, young South Africans can be the global leaders in technology and innovation. Unfortunately, many young people – especially girls and young women – are hesitant to study IT-related subjects, and this should be changing.

The Talent Search, a challenge run by the Computer Olympiad, which is an IITPSA programme, helps identify learners with computational skills. By running the Talent Search at their schools, teachers can help learners discover that IT isn't as intimidating as they may think. They can reveal their aptitude and start encouraging them to work towards rewarding careers in IT. That's why the IITPSA would like to encourage government, independent and home schools to participate in the Talent Search. We also encourage parents

to motivate schools to enter their learners in the Olympiads.”

The Talent Search is the South African version of the Bebras Contest which attracts more than two million participants from more than 50 countries in the rest of the world each year.

Locally, it is a free programme which can be undertaken either online, or offline using pen and paper. The challenge is a series of puzzles tailored by age and grade, with five categories for learners ranging from Grade 4 Elementary to Grade 12 and Elite level. After the Talent Search, learners who have already mastered a computer language can enter the Programming Olympiad. Those who know how to use applications like spreadsheets, databases and a word processor can enter the Applications Olympiad.

Talent Search will run from 7 to 11 March 2022, with participat-

ing learners writing a 45-minute paper at their schools. The Talent Search teaches learners to think computationally and solve problems and helps schools to identify which learners should consider IT, CAT, Science and Maths as subjects.

Learners can participate either online or offline, and the tasks and challenges are supervised by their teachers. The top 50% of participants country-wide will be awarded gold, silver or bronze certificates, according to how well they performed in the challenge.

To see examples of past pen and paper challenges, visit <https://olympiad.org.za/talent-search/past-papers/pen-and-paper/> or to practice online, go to <https://olympiad.org.za/talent-search/past-papers/online-trial/>

Schools are invited to participate by registering here: www.olympiad.org.za/Talent-Search/register/

Fuelling South Africa's Gas Revolution

It is no secret that there is a global shift towards smarter and greener energy use. While still predominantly relying on coal, South Africa is aiming towards combining gas and renewables as the best future energy solution. Across multiple sub-sectors in the gas industry, it is vital then for key players to develop and grow as a united group in order to support South Africa's energy goals.

As a new year marches in and we inch closer to 2030, the fact is that coal remains the reigning king of energy resources. Recent data released by General Electric states that coal accounts for 86 percent of the country's energy mix, making South Africa's 2030 goal to reduce its annual greenhouse gas emissions by an additional 25 percent of its 2015 commitments seem not yet within reach. While discouraging, this does not spell doom for South Africa's future energy goals. From the successful implementation of importing natural gas via pipelines from Mozambique to South Africa, as well as the City of Johannesburg converting a large portion of a variety of service vehicles to run on compressed natural gas, it is evident that there is ample drive and ambition behind fully utilising gas energy in our country.

When ESI Africa spoke to head of WITS Business School South Africa, Maurice Radebe, on what they called the “gas revolution,” he said that “gas is a solid bridge” for South Africa to transition to more sustainable energy solutions. In order to accomplish this, Radebe believes the role of government makes a large contribution towards achieving this. Government must ensure that there is a regulatory framework in place in order to encourage investment, employment creation as well as keep all gas practices legal and competent. This is what pushes development in the right direction.

Whether it's a humble gas hob in the average South African home or large scale combustion and heating systems in industrial sectors, we must never lose sight of the big picture. All types of gas practitioners and their relevant associations are connected because everyone falls under one regulatory structure. One that is crucial to South Africa's energy development. This is where the South African Qualification and Certification Committee for Gas (SAQCC Gas) is a key factor in the country's energy future. SAQCC Gas was formed in order to establish a central database of registered and authorised gas practitioners to work on gas and gas related systems. Depending on what gas a practitioner specialises in, they may belong to either of the four associations: Liquefied Petroleum Gas Association of South Africa (LPGSA), Southern Africa Compressed Gases Association (SACGA), South African Refrigeration & Air Conditioning Contractors Association (SARACCA), and Southern African Gas Association (SAGA). However, it is compulsory in terms of the Occupational Health and Safety (OHS) Act, specifically concerning the Pressure Equipment Regulation (PER), for all gas practitioners to be registered with SAQCC Gas.

SAQCC Gas is the regulatory framework mandated by the South African government to ensure registrations of qualified gas practitioners. The four associations on the

board facilitate essential growth in the gas industry. John Parry, Chairman of SAQCC Gas, emphasises that for development, communication is an important business tool. “No matter how large or small the company is; if you fail to get the message across you are not going to get everyone going in the same direction.”

At SAQCC Gas, that direction is crystal clear. First and foremost, safety is the top priority in gas installation and use. Registration as well as reporting of non-compliance ensures that a uniform standard is adhered to, meaning all precautions are taken when mistakes can seriously impact lives. “Our strategy focuses on public awareness. The public drives the registration of gas practitioners by being aware of the legal requirements, [for instance,] people must ask for registered practitioners and a Certificate of Compliance (CoC).”

Parry adds that SAQCC Gas streamlines a gas practitioner's access to new gases, training, regulations, industry developments and technological advancements. Keeping informed and updated is just as vital as minimising environmental impact. When it comes to controlled gases, Parry notes that SAQCC Gas advocates high competency in the recovery of refrigerant gases and limiting the releasing of certain gases into the atmosphere which positively contributes to reducing the depletion of the Earth's ozone layer.

ABOUT THE CHAIRMAN:



John Parry, newly appointed Chairman of SAQCC Gas, who has been on the SAQCC Gas board for the past 9 years. As well as being a mechanical engineer, Parry has invaluable experience in the gas industry.



Heat Input - Advanced Control in Welding Application

HEAT input is one of the most important factors affecting the quality of a weld due to its formative effect on the Heat Affected Zone (HAZ) and weld metal properties, particularly mechanical toughness, and development of potential flaws.

The size and severity of the HAZ are also affected by such factors as weld geometry, environmental conditions; but mostly depends on the amount of heat applied, the duration of exposure to heat, and the properties of the material and its filler metal. In terms of heat input, at its simplest, when a material is exposed to greater amounts of energy for longer periods the HAZ is larger.

Generally speaking, the higher the strength of the base material, the greater the need

for precaution during welding. In most cases, problems arise when the heat input is too low or too high. Heat input that is too high, either through excessive voltage, excessive amperage, or slow travel speed, can slow your cooling rate, resulting in excessive grain growth. This results in changed mechanical properties, mainly a decrease in the material's toughness. Too high a voltage can cause small amounts of alloy to be lost in the arc, directly reducing the effective mechanical properties of the welded joint.

Slow travel speed usually occurs when you attempt to fill a large joint with only a few weld passes. This raises the heat input drastically. The solidification rate of the weld pool occurs at a slower rate, promoting grain growth in the

weld metal and HAZ. Similarly, the size of the HAZ decreases as the speed of the welding process increases.

So, controlling heat input more precisely can reduce the HAZ and weld flaws or deformation, and also helps avoid costly post weld corrective and clean-up work.

Different welding equipment manufacturers have come up with a number of solutions for this; many of which rely on the development of digitally controlled synergistic power sources and more precise control of the waveform. Software is only part of the solution, however; key breakthroughs come from deep understanding and manipulation of arc physics.

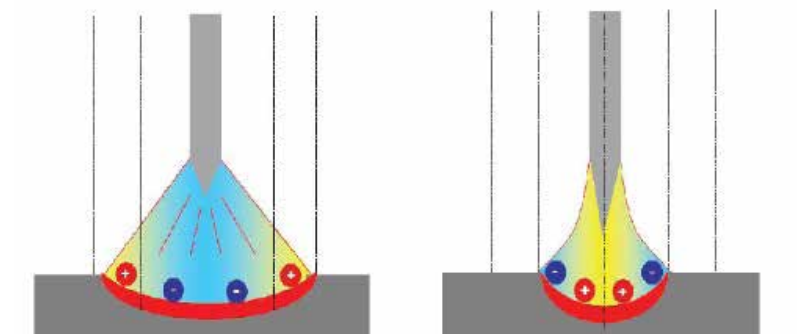
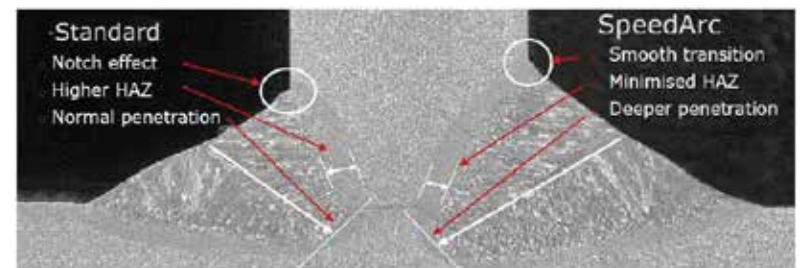
For instance, Lorch (leading German welding machine manufacturer) developed a unique Speed Arc pro-

cess that manipulates and focusses the arc, which has the effect of significantly reducing heat input whilst allowing faster travel speeds, (see diagram).

The result is a better quality weld with smaller HAZ and deeper penetration, as can be seen in this weld cross-section.

Another way to control heat input is to lock the parameters on your welding machine so the user must stay within the safe zone of voltage, amps, wire feed speed for the particular job, or simply lock in your weld procedure parameters. This is easily done with Lorch's innovative NFC (Near Frequency Communication) cards on a Lorch MicorMIG machine.

In summary, controlling and reducing heat input means better welds, lower risk of weld faults, significant



Standard MIG-MAG

• Rel. high temperature input
• Rel. low temperature input

Lorch SpeedArc

• Rel. high temperature input
• Rel. low temperature input

reductions in spatter, improved operator use and comfort, improved productivity.

Processes and capabilities which

reduce heat input are an important feature to look for when choosing a synergistic welding machine for both the benefits in

weld quality and productivity gains.

Reprinted from Welding Engineers :<https://weldingengineers.co.nz>

Nozzle mixing gas cutting torch

THE new range of Proficut H and HB heavy duty hand cutting torches for nozzle-mix (3-seat) nozzles continues the tradition of Messer torches with the quality and reliability which is synonymous with Messer. Proficut H and HB is a proven design incorporating the latest technical features necessary to meet the ever-changing applications and requirements of the hand cutting market.

Its ergonomic and modern functional design permits steady, effortless control by hand and its balanced weight enables the operator positive and comfortable working conditions for a continuous operation.

The cutting and gouging torch range Proficut H and HB for high quality value.

Designed in accordance with the most current internationally recognized standards EN ISO, AS, BSP, CGA and NFE.

- Manufactured under the quality management system of EN ISO 9001
- 100% tested before dispatch.
- Principally designed for general workshop cutting up to 300 mm / 14 inches capacity.
- Torch length of 510 mm / 20 inches ensures optimal balanced weight distribution increasing operator efficiency and comfort.
- 1050 g / 2.3 lbs weight enables controlled movements and makes it ideally

suited for a wide range of industrial applications.

- 90° solid forged head withstands toughest working conditions.
- Large cross-sectional areas enable high gas flow and ensure that the required oxygen and fuel flow rates, even on heavy duty applications with low gas pressure,

are still maintained.

- In-plane parallel arranged stainless steel tube and rugged design ensures maximum strength.
- Suitable for acetylene as well as LPG family of fuel gases just by changing the nozzle.
- Adjustable gland packed gas valves allow precise and sensitive adjusting as well as accu-

rate control of the flame.

- Colour coded adjusting valves for easy identification.
- Bottom mounted stainless steel lever with the benefit of a unique cutting oxygen flow valve operated by the cutting lever acts indirectly to bring in the oxygen stream. This important feature gives a true "bleed

characteristic" to create splash free starts and progressive, controlled piercing and the smoothest possible cutting conditions.

- Cutting oxygen lever incorporates a locking lug for maximum operator comfort.
- Modular design reduces maintenance cost and downtime.



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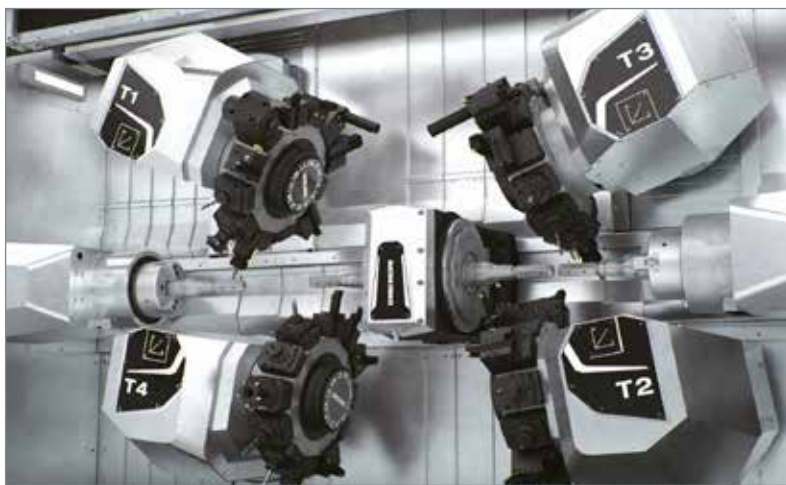
Steinmüller Africa (Pty) Ltd. is one of the enterprises in Bilfinger Power Africa (Pty) Ltd., the South African subsidiary of German based Bilfinger. Our presence in the local market, spanning 53 years, is testimony to our unrivalled expertise in the steam generation industry. Services offered range from the design and manufacturing to the construction and maintenance of boiler pressure parts. At our South African based manufacturing facilities, we also specialise in fabrication of high-pressure feedwater heaters, pressure vessels, pipe supports and compensators. On-site maintenance crews provide support to the power generation and petrochemical sectors.

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- Plant erection services ■ Explosive welding

WE
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NZ platform sets new standards



Due to the modular machine concept, the NZ platform includes the NZ DUE, NZ TRE and NZ QUATTRO. This means that two, three or four machining unit can be placed in the workspace.

AS the latest series in DMG MORI's production turning portfolio, the NZ platform sets new standards in modularity, flexibility and productivity for individual customer requirements on a footprint of just 17.8 m².

- Two machine bed sizes: short version for workpieces up to 740 mm, long version for workpieces up to 1,290 mm
- Highly flexible with up to four machining units for turrets:
- 80 mm Y axis on each position
- -10° to +100° B-axis possible on all four positions
- TWIN spindle as steady rest, Swisstype functionality

- Can be automated with integrated workpiece unloader, bar loader or one or two gantry loaders, robot in the work area, Robo2Go or MATRIS

Available in two bed sizes, the new NZ platform serves a wide range of components. The short version is designed for workpieces up to 740 mm in length, while the long version accommodates components up to 1,290 mm. Chuck machining is possible in both cases up to a diameter of \varnothing 120 mm, and for bar machining the passage is \varnothing 65 mm. Including the 3.30 m long bar feeder, the NZ requires only 17.8 m² of floor space. Stabil-

ity and precision in machining are ensured by the symmetrical architecture bed with high thermal stability and equal chip removal performance in all positions. On the control side, the NZ platform is equipped with a 19" DMG MORI SLIMline touch panel and FANUC 30iB.

Maximum modularity with up to four milling units

The highlight of the NZ platform is the individual equipment options, allowing each user to define a manufacturing solution tailored to their exact requirements. Due to the modular machine concept, the NZ platform includes the NZ DUE, NZ

TRE and NZ QUATTRO. This means that two, three or four milling units can be installed in the workspace. Each of these units can be freely positioned and has a Y-axis with 80 mm travel and a B-axis with a swivel range of -10° to +100°. There is also the option of an TWIN spindle in the Z axis with a diameter of \varnothing 65 mm. It serves as a hydraulic steady rest and offers a Swisstype function with up to 5,000 min⁻¹ speed in the guide bush. Furthermore, the TWIN spindle can be used for turning at 4,000 min⁻¹ and 60 Nm.

Even more productive with automation solutions

DMG MORI offers a range of automation solutions so that users can also secure their competitiveness in the long term with the NZ platform. An integrated workpiece unloading unit and a bar loader is just as much part of the portfolio as autonomous production via one to two gantry loaders or a robot in the workspace. In addition, the NZ platform is available with the Robo2Go or MATRIS.

Contact Retecon (Pty) Ltd South Africa for more information.

Ultra bulk package holds 22% more welding wire in a stronger package



ESAB Welding & Cutting Products has introduced Marathon Pac™ Ultra, a new 500kg bulk welding wire drum that features a robust outer box and reinforced corners for stabilizing the inner drum to prevent wire movement during shipping. Marathon Pac Ultra retains ESAB's trademarked octagonal inner drum, known since 1989 as the industry benchmark, as well as ESAB's reverse coiling technology to ensure that the wire comes out straight for greater process stabil-

ity, less spatter and better targeting, positioning the wire at the center of the weld joint. Marathon Pac Ultra holds 22 percent more wire than the previous ESAB drums and 45kg more than competitive drums, providing an additional 8 to 16 or more hours of welding time before needing to rethread the drum, depending on the process and parameters.

"The Marathon Pac Ultra has been tested and certified to the International Safe Transit Association (ISTA) 3E standard

to provide our customers with wire integrity assurance and smooth, uninterrupted feeding performance for higher productivity," says Roberto Guerrero, Global Packaging Engineer, ESAB.

A new desiccant and plastic bag with VCI (volatile corrosion inhibitor) protect the wire against moisture and corrosion. Drums are shipped two at a time using heavy-duty straps to secure them to a wooden pallet (instead of wrapped with stretch film). A new side window on the hood makes it easy to monitor wire level without removing the hood.

ESAB packages many of its most popular solid wires in Marathon Pac Ultra drums, including OK Aristo-rod non-copper-coated MIG wire for superb feedability, arc stability and spatter control; Purus MIG wire for reduced post-weld cleanup and Spoolarc premium copper-coated MIG wires for any quality carbon steel or low alloy application.

Additional Improvements

The new drums retain the same 600 x 600 mm base size and with the integrated pallet, retains the same height. Lifting straps and slots for a lifting yoke allow moving the drum with an overhead crane. Existing Marathon Pac dollies and lifting yokes will work with the new Marathon Pac Ultra. When the drum is depleted, the corrugated paper components of the sustainable package can be broken apart and flattened for easy recycling.

World leader in industrial gases.

Air Liquide is a leading innovator in the application of gases to assist the mining and metallurgy industry.

The development of the **ALDOC** system for leaching gold leads to improved efficiencies, reduction in costs and a boost in profits. **ALDOC** facilitates, monitors and controls the oxygen in cyanidation tanks with an efficient injection system that delivers flow-rate, purity, pressure, uptime and Dissolved Oxygen.

Air Liquide's summary of benefits

- Reduced Process Cost
- Reduced Cyanide Consumptions
- Quality
- Improved Kinetics
- Service
- Improved Recoveries

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ALDOC

Biodegradable polymers driven by demand, and necessity

THE need for sustainable, even biodegradable polymers – in particular for biodegradable adhesives and compostable glues – has never been greater. Biodegradable adhesive systems now serve a wide variety of industries, from general packaging to the specialized medical sector.

Compostable adhesive – a type of biodegradable glue

The terms compostable and biodegradable are often considered synonyms. However, they are not. Biodegradable adhesives refer to glues that break down naturally, eventually. Compostable adhesives are also biodegradable, but they only deserve the title if they comply to a specific break-down process, and do such within a restricted period of time.

Compostable adhesives may break down in domestic or industrial conditions,

depending on the adhesive formulation. They take much less time to break down into useful or harmless components than biodegradable materials generally do.

Benefits of biodegradable and compostable adhesive technology

Biodegradable adhesives, including compostable glue, first were available for a very few applications. However, their extremely green approach towards bonding encouraged the development of new systems, suiting an ever-increasing range of applications. General sustainability aside, biodegradable glues come with more benefits:

- No microplastic pollution: biodegradable adhesives consist of natural materials that do not lead to microplastic pollution at any stage of their lifecycle.

- Reduced waste processing costs: biodegradable glue breaks down into natural gases and biomass, which reduces waste processing costs. Waste processing does not involve hazardous chemicals. Compostable glue waste is especially economical to process. The breaking down is generally faster than with other biodegradable glue systems.
- Soil enrichment through waste: the products of breaking down compostable adhesive are suitable for enriching soil and so stimulate growth of plants. Other biodegradable solutions may not be harmful to the environment; however, they do not enrich the soil as effectively as compostable waste.
- Workplace safety: as biodegradable

adhesives are free of hazardous substances, applying the adhesives is safer than when working with other adhesives.

- Accordance with environmental planning: for example, the UK Plastics Pact requires all plastic packaging to be reusable, recyclable or compostable by 2025. Other similar acts exist and their number is constantly on the rise.

Next to the benefits that lead to reduced environmental impact, biodegradable and compostable adhesives also offer great business opportunities. This especially for adhesive manufacturers and users.

Green products are an ever-growing trend, and demand increases by the day. This leads to greater need for both the adhesives and products which use the adhesives.

Examples of biodegradable glue and compostable adhesive systems

In continuous development, biodegradable glue systems become available for more and more applications. The hottest topics of the moment that involve biodegradable glue or even compostable adhesive systems include the following.

- Hot melt adhesives: especially the packaging industry currently benefits from biodegradable hot melt systems which guarantee an efficient process and a 100% green solution.
- Heat seal adhesive: again beneficial to the packaging industry, heat seal adhesives ideal for paper and biofilm applications can be biodegradable.
- PSA adhesive: compostability can be integrated into



pressure sensitive adhesives which allow for applications on tape and labels.

Biodegradable adhesive allows for food packaging material to be converted into biomass and CO2.

How biodegradable glue works

The molecular structure of biodegradable adhesive systems resembles that of natural polymers. However, micro-organisms – such as bacteria – break down the biodegradable materials, hence the name biodegradable. These adhesives exist as liquid solutions

and hot melt solutions. Micro-organisms use enzymes to break down the adhesive into carbon dioxide, water and biomass.

As mentioned, to deserve the title 'compostable', the adhesive must break down within a specific period of time and under specific conditions, in either domestic or industrial processes. Unsurprisingly, of the two, the industrial one is far more common among compostable glues. Either way, the resulting products of both processes are beneficial, as they can be used for enriching soil, i.e. as compost.

Optimising production by making the correct tool choice

MANUFACTURING methods, bonding systems and mineral types have been evolving to keep up with the demands created by new modern innovative alloy introductions. Grinding Techniques - a Tyrolit company, is at the cutting edge of development and able to provide a solution for any abrasive requirement.

When one looks at the new range of "super alloys" being developed, it has become increasingly evident that machining of these materials will be and is already a serious challenge. Grinding has proven to be one of, if not the preferred method, of shaping these alloys. Abrasive

manufacturing companies all over the world are gearing towards the grinding, shaping and machining of these alloys with a far greater success rate over that of the machine tool bit manufacturers. New innovative machines being developed have brought grinding and machining times of certain components down from 46 hours per part, to less than 24 minutes per part.

Grinding Techniques introduced the new Ceramic range of grinding tools, developed for rapid accurate cool grinding on specialised alloy castings in excess of 700HBR. The results achieved when compared to con-

ventional abrasive tools were almost incomparable. Grinding times on these hard materials were reduced by more than 66%, and as a result of the reduced grinding times, heat generated through friction was significantly reduced, with a substantial cost saving as a result. Scrap rates as a direct result of heat cracks are now something of the past.

This product, as good as it is for chrome and abrasion resistant materials does not provide the same performance level on cast iron, sg iron, manganese and steel. Due to the fact that the grinding mineral offers a sharper, more aggressive



sive grind on contact, but the bonding system employed breaks down in a different manner to that of conventional grinding wheels developed for softer materials. This reduces the efficiency of the grinding tool on application and increases the cost associated with grinding to a point where it is just not viable to use.

So where does one begin when choosing the most appropriate tool for the job at hand? It starts with the challenge to achieve a better result and produce a better product, at a better cost for the specific application.

What would you like to achieve? Faster grinding times with less of a bottleneck in

your fettling bay? Less grinding cost per component? Lower scrap rate? Reduction in machine maintenance cost, or replacement cost? Better aesthetic finishing? All of the above or at least a combination of the above are possible.

Grinding Techniques - a Tyrolit company, offers a comprehensive

range of abrasives geared towards achieving the required optimum result. With more than 100 years of manufacturing experience it is willing and able to conduct trials, assist with application optimisation, and work along-side customers to tailor make a solution that achieves the desired results.

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Grinding Techniques





BEKA SOLAR units have been installed along the road leading up the Langgewens Research Farm.

LED solar lighting solution for Malmesbury research farm

LANGGEWENS Research Farm is located between Malmesbury and Moorreesburg in the Swartland. Established in 1926, the farm's purpose is to provide infrastructure and staff

to support researchers. Research institutions currently involved in projects on the farm include the Western Cape Department of Agriculture, Stellenbosch University, ARC Small Grain Institute,

Swartland Cereals Development Group and other private institutions.

[Source: <https://www.elsenburg.com/research-farm/langgewens-research-farm>]

BEKA SOLAR units have been installed along the road leading up the Langgewens Research Farm. Due to the high costs that electrical reticulation would pose, it made sense to go the solar lighting route.

The BEKA SOLAR was the LED solar lighting solution of choice. This solar streetlight for outdoor residential and public applications offers a full customizable option to suit all off-grid solar lighting requirements.

"...offers the best energy storage options and autonomy available on the market..."

The BEKA SOLAR is available in a standard single streetlight or median version with the ZIYA luminaire, or a post top version with the ZELA luminaire. It provides a reliable lighting solution with a high Ingress Protection level that withstands high ambient temperatures and vandalism. These luminaires are a sustainable off-grid performer with a superior lumen/watt ratio.

The photovoltaic energy conversion is optimized by efficient Polycrystalline solar module technology to maximise solar energy. This in turn offers the best energy storage options and autonomy available on the market with our range of battery options, namely Lead, Lithium and the new SuperCapacitor which removes the depth of discharge (DOD) issues, and offers extended life and discharge cycles.

Controlling the whole system and using this solar energy by programming the Maximum Power Point Tracking (MPPT) charge controllers, it protects and optimizes the system from any internal and external factors, like thermal environmental changes when charging the batteries.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions and is proud to be associated with the Western Cape Government in providing a successful LED solar lighting solution for this project.

For further enquiries, contact Grant Kemp at 021 510 8900 or ct@beka-schreder.co.za

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The SOLARPOLE offers an integrated aesthetic option to fully suit your off-grid solar lighting requirements in outdoor residential and public applications. Combined with the ZIYA luminaire, the SOLARPOLE provides a reliable lighting solution for roads applications. The popular KAZELLE post top luminaire completes the offering for urban requirements with a minimalistic and modern look. The cylindrical solar module is revolutionary. The vertical solar panels use a cylindrical module to achieve a better aesthetical design, and excellent performance in wind resistance.



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Key supplier of motors and VSDs for Kamoa-Kakula

ZEST WEG is supplying an extensive range of motors and variable speed drives (VSDs) for the second phase of the Kamoa-Kakula project, one of the world's most exciting new copper developments, located on the Central African Copperbelt in the DRC.

Phase one produced its first copper concentrate on 25 May 2021, and is expected to produce 200 000 tons of copper in concentrate annually. Phase 2, now in the advanced stages of construction, will result in a doubling of production capacity. Future phased expansions will eventually see a mining rate set to process 19 million tons per annum.

For the first phase of the project, Zest WEG was also the key supplier for this electrical equipment. According to Joe Martins, mining sector specialist for Zest WEG, the mine's scope of supply for the second phase

is a repeat of the first. The first phase was supplied in 2020 with WEG medium voltage VSDs and WEG high voltage motors to drive the mine's primary and secondary mills in the concentrator plant.

"We began to manufacture these long lead time items in 2019, and delivered two medium voltage VSDs and two 3,3kV motors for the mine's 7 MW primary ball mill and its 7MW secondary mill," says Martins. "Our high voltage motors and medium voltage VSDs were also selected to drive the two 1 200kW high pressure grinding rolls (HPGRs) in the plant."

WEG high voltage motors and automation solutions drive the underground ventilation fan applications, providing fresh air to the underground mine workings, he says.

All these large items are designed to specification, manufactured and tested in



The mills at Kamoa-Kakula's phase one.

WEG's Brazil facilities. Due to Covid-19 travel restrictions, the factory acceptance tests were conducted virtually, with special processes being developed to allow thorough inspection and comment online. The testing of the equipment for phase two – also conducted in a virtual environment – was completed in the third quarter of 2021.

Significantly, Kamoa-Kakula will be among the world's lowest greenhouse gas emitters per unit of copper produced, and Zest WEG's energy efficient motors and automation solutions will contribute to this.

The first phase order included over 700 WEG low voltage IE3 premium efficiency motors, supplied to various local and inter-

national original equipment manufacturers, and installed throughout the concentrator plant. These motors drive equipment such as the rock breakers, conveyor drives, flotation cells, thickeners, slurry pumps, winches and other mechanical OEM packages.

Where processes within the plant required variable speed control, WEG low volt-

age VSDs were selected to provide the speed and control necessary for this equipment. Martins explains that by selecting WEG low voltage VSDs in combination with WEG low voltage motors, Kamoa-Kakula will benefit from a 36 month warranty period.

"An important part of the energy efficiency strategy was for the plant to standardise on our IE3 premium efficiency motors – rated according to the IEC 60034-30 international standard," he says. "With a class leading energy efficiency rating, this means reduced carbon emissions and greatly reduces operational energy costs."

Additionally, Zest WEG is supplying the Kamoa-Kakula Project with a new 20MVA, 33kV/11kV mobile substation, which is currently being manufactured in South Africa. The substation will provide stepped down power, and can

be moved to supply power to different areas within Kamoa-Kakula's mining footprint.

"Underpinning the performance of our equipment at the mine will be high levels of service and support from Panaco who is our Value Added Reseller (VAR) in the DRC," says Martins.

Commenting on VARs, Martins says that those appointed by Zest WEG in this role are far more than simply distributors. "Panaco, as our VAR in the DRC, is a 100% locally owned business specifically chosen to promote and support the wide range of Zest WEG's offering in the region. Its team includes technical specialists and the company's operating methodologies and culture are closely aligned with ours, and will aid in supporting our current installed base, client network and growth expectations in the region."

Installation testing that protects appliances - wirelessly shares data

GROWING concern for public safety and the increasing complexity of today's fixed electrical installations in domestic, commercial and industrial premises places extra responsibility on electrical test engineers who are charged with verifying conformity to South Africa's Certificate of Compliance (COC) safety standards.

SA's Electrical contractors are well versed in the verification requirements of the COC, and that the audit should be carried out in the following sequence:

1. Visual inspection
2. Testing of the following:
 - continuity of protective conductors;
 - insulation resistance;

- protection by separation of circuits;
- floor and wall resistance;
- automatic disconnection of supply;
- polarity;
- functional performance;

In addition to this the following tests are under consideration:

- electric strength test;
- voltage drop.

The basic requirements for test equipment used in installation testing consists of general requirements for test equipment, specific requirements for combined measuring equipment and the specific requirements for measuring/testing:

1. Insulation resist-

2. Loop impedance
3. Resistance of the earth connection
4. Resistance to earth
5. RCD performance in TT and TN systems
6. Phase sequence
7. Insulation monitoring devices for IT systems

The Fluke 1660 Series Multifunction Installation Testers are measuring equipment which fully fulfil the requirements as described above, and the three different models in the series comply with specific parts of this norm. They are specifically designed to carry out the tests specified, and all local standards and regulations in the safest and most efficient way. Comtest is offer-

ing Fluke 1660 Series Installation tester with Fluke Connect®, which includes the 1664 TM Installation Tester - the only installation tester that helps prevent damage to connected appliances during insulation tests, and also allows users to send test results wirelessly via smartphone directly from the field. They are lightweight, and feature a unique ergonomic 'curved' form that, when carried by the neck strap, makes operation in the field more comfortable.

- Work safer, protect the installation under test, share results The Fluke 1664 FC is the only installation tester that protects connected appliances from damage

during insulation tests, and allows users to share test results wirelessly by smartphone with co-workers or customers.

- Insulation PreTest The Fluke 1664 FC Installation Tester is also the only tester with patent pending "Insulation PreTest". If it detects that appliances are connected to the system during test, it will provide a visual and audible warning and stop the insulation test, avoiding potentially serious/costly mistakes and eliminate accidental appliance damage.
- Fluke Connect®, ShareLive™ calling and Fluke Cloud™



storage ShareLive™ video calls Users save time by eliminating data entry by wirelessly syncing measurements directly from the 1664 FC and share with a remote team using Fluke Connect®. Having access to measurements simultaneously at the inspection site and the office allows faster decision making and real time collaboration

between team members. Cloud storage allows users to retrieve stored results whether in the office or out in the field, to make urgent decisions in real time. Data can also be imported into Fluke DMS to process and generate certificates.

The Fluke 1664 FC is part of a growing system of connected test Tools* and equipment maintenance software.

Community housing schemes also need electrical compliance certificates

LEGISLATION regarding electrical compliance certificates applies to community housing schemes as well as to individual freehold properties - and prospective buyers in estates and Sectional Title complexes should not allow themselves to be told otherwise by home sellers or estate agents keen to close a deal.

"In terms of the Occupational Health and Safety Act, every homeowner must have a Certificate of Compliance (CoC) for the property's complete

electrical system, which will be needed before transfer can take place to a new owner," says Andrew Schaefer, MD of property management company Trafalgar.

"Only a certified electrician may issue the certificate and there is a strict code of practice, according to SANS 10142, which all electrical installations must adhere to, in order to protect the home and its occupants from electricity-related risks such as shock from metal appliances, plug point faults, inad-

equately insulation, the risk of fire when faulty wires overheat and extreme voltage fluctuations which damage electronic and other appliances."

An electrical CoC is only valid for two years, he notes, so most home sellers will need to get a new one before the property can be transferred to a new owner. "They should in fact also get a new one every time that they make any changes or repairs to the property's electrical installation - and it is really worth doing so because

a current, valid CoC will also be required should they need to claim any insurance relating to an electrical system malfunction."

In the case of Sectional Title schemes, says Schaefer, electrical CoCs are required for both the individual sections and for the common property, with unit owners being responsible for compliance within their own sections and the body corporate being responsible for any electrical installations on the common property, such as the

outdoor lighting, gate motors, a CCTV system and any other security apparatus.

"In many community housing schemes, there will also be a requirement for a separate CoC for the electric perimeter fencing, and this will also need to be obtained and held by the body corporate in a Sectional Title scheme, or the homeowners' association (HOA) in an estate."

This seems straightforward enough but, he says, home sellers in community housing schemes who need

to obtain copies of the CoCs for the common property installations and the electric fencing to give to their buyers quite often find that these have been lost, not replaced as required or perhaps not obtained at all. "In addition, other owners who are not selling and don't currently need copies of valid common property CoCs may argue against the cost of obtaining new ones.

"However, the fact is that their scheme could be held liable and have to pay substantial damages if someone

is shocked or electrocuted on the common property, for example, or there is a fire caused by an electrical short, and the electrical system or electric fencing has not been certified safe.

"This is why we urge all trustees of Sectional Title complexes and the directors of HOAs to ensure that their schemes have the correct CoCs at all times, and to encourage any person who purchases or rents a home to insist on seeing valid CoCs before signing a sale or lease agreement."

Infrared and AI add new level to wind turbine blade inspection

By Ian Griggs of
WindPower Monthly

A drone equipped with a powerful heat lamp and artificial intelligence can detect flaws not visible to the human eye, developers claim

UK-based companies Innvotek and Mapair said they had successfully trialled a drone system to inspect composite structures such as wind turbine blades for defects.

The Firefly Inspect can hover above blades and test for defects using a 1kW heat lamp — which the developers claim is the most powerful heat source ever to be fitted to a drone.

In recent trials at the ORE Catapult's National Renewable Energy Centre, in Blyth, north-east England, the drones demonstrated their ability to hover autonomously and manoeuvre close to vertically-suspended wind turbine blades.

The Firefly's development was joint-funded by Innovate UK and Canada's National Research Council, with additional support from Cranfield



The Firefly Inspect is equipped with a 1kW heat lamp to test blades for defects (pic credit: Innvotek).

University, Université Laval and Canadian company BI Expertise.

Developed for aircraft

The concept for the specialist drone was originally designed for inspecting the wings of aircraft in hangars, but after collaborating with UK research and development hub ORE Catapult, it was adapted for wind turbines, both onshore and offshore.

Turbine blades are typically made from lightweight composites that can erode or become pitted over time due to exposure to extreme weather.

Regular inspections are needed to stop small faults from turning into major issues and manual inspections are the norm for the wind-power and aircraft industries.

According to the developers, drones that can detect structural defects and locate them using artificial intelligence offer a safer and more accurate means of inspection.

This will allow operators to make informed decisions and extend the service life of components, they added.

The drone uses 'motion capture technology' for navigation, avoiding the need to use GPS which can be subject to

interference at sea.

Andrew Macdonald, offshore wind development and operations director at ORE Catapult, said: "Offshore wind is set on a course of rapid expansion across the world. The sheer scale of operations, the super-sizing of turbines and their deployment ever further from shore — all these factors make human-led inspections more fraught, risky and costly.

He added: "UK developers like Innvotek are gaining the first-mover advantage in creating the robotic and digitalised solutions of the future."

Localisation - a key economic driver



Wind tower manufacturing facility in Prieska, Northern Cape that manufactures concrete wind towers for the Garob Wind Farm and Copperton Wind Farm.

ORIGINAL Equipment Manufacturers (OEMs), such as Nordex Energy South Africa (NESA), will play a key role in stimulating local jobs and skills. The company sees the latest Bid Window (BW5), as an important link in driving the local value chain, which will directly stimulate the domestic job market.

"The wind power industry is expected to drive an estimated R40 Billion of investment each year over the next decade, with a fairly large percentage coming from the economic benefits of stimulating the local value chain. This includes local manufacturing, transportation and other related industries," explained Compton Saunders, Managing Director of Nordex Energy South Africa.

He added that the option of concrete constructed wind turbine towers has the added advantage of boasting close to 100% local content, including raw material such as concrete and rebar steel, aggregates and labour, in addition to offering the option of manufacturing at site. "Currently Nordex is the only supplier of local concrete towers, which are manufactured by the local industry, create local jobs and skills directly at site, as the manufacturing facilities can be set-up close to the project facility during construction, stimulating and driving local employment in rural areas. This industrial strategy is aligned with the Just Energy Transition Policy and one of many primary benefits of the South African government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)."

Assuming that smooth procurement of

new wind energy production continues, in line with the Integrated Resource Plan (IRP), this sector is an excellent vehicle for direct infrastructure investment and a positive multiplier of economic effects, including specialised components manufacturing such as wind turbine towers; construction industry; engineering and logistics.

Sector experts point out that although it's still to be confirmed whether the country is well positioned to be competitive at a global scale in all components, the first step is to ensure industry makes the most of local opportunity and builds capacity to supply the local market. Furthermore, it has been noted that certain parts of the supply chain may emerge to be more strategically placed to cultivate capacity in South Africa than others in order to be able to be competitive.

The BW5 local content threshold has been retained at 40%, in line with previous rounds; however the scoring mechanism incentivising further commitments above 40% has been removed from the RFP regulation. For the first time the REIPPPP has introduced the concept of designated local content, which requires developers to procure specific components locally such as steel. Should these components be unavailable, bidders can apply for an exemption, which needs to be lodged with the Department of Trade, Industry and Competition.

However, Nordex believes that this shouldn't be applied to tower production, as both local and international companies have already invested in local manufacturing facilities that suc-

cessfully produced these components for the previous REIPPPP Rounds. Furthermore, these OEMs have confirmed capacity to fully deliver the required towers for BW5, as well as future bid windows.

With the announcement of BW5 under the REIPPPP, which includes 1 600 MW from onshore wind energy and BW6 expected to be announced Q1 2022, the wind power sector is gearing up to deliver adequate energy to the country and help shift the economy onto a positive trajectory.

"Job creation and skills development will be a direct result of these consecutive bidding rounds, as they enable local manufacturing to be re-established or continue in the case of our concrete towers," added Saunders.

The most recent REIPPPP project to come on line, Garob Wind Farm, incorporates 46 wind turbine generators with AW125-3150 technology, as well as concrete towers, and is able to generate 573GWh each year, during its 20 years of operations. The 145MW Garob Wind Farm, achieved commercial operation in December 2021 and is located in the Northern Cape, close to Copperton, in the Siyathemba Local Municipality.

The construction of Garob Wind Farm, which commenced in April 2019, installed concrete towers fully produced in the manufacturing facility set up in Prieska, a mere 40km from site. The work was completed by local contractors, providing employment for over 500 people from the local community at the peak of the construction phase of the project.



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Industrial conveyor chain for special applications



ZMC bottle washer chain.

BMG's comprehensive range of power transmission components incorporates ZMC industrial conveyor chains that offer dependable service in diverse applications, especially for use in food production.

"BMG's ZMC solutions for the food and beverage sector extend from the processing of raw ingredients, to baking, bottle washing, packaging and safe distribution," explains Gavin Kirsten, Product Manager, BMG.

"Our team of specialists advises customers at food and beverage plants to only invest in conveyor components that are manufactured in food-compliant materials - like stainless steel - for highly-specialised and safety-critical applications in food manufacturing and preparation.

The ZMC portfolio comprises standard chains and chains for special applications, which are manufactured in Italy to stringent quality specifications and are available from BMG in a wide range of dimensions, mechanical characteristics and geometry. These metric and imperial chains are available with solid, hollow or extended pins, with bushings, rollers or bearings mounted at the centre of the links, or with holes in the links,

specially designed for the subsequent assembly of the necessary components. BMG also supplies sprockets, with or without a hub, for each type of chain.

BMG's range of ZMC chains for special applications - particularly for the food, beverage, packaging and pharmaceutical sectors - is manufactured with the appropriate combination of materials, heat treatments, surface coatings, geometry and precise dimensions to cope efficiently with complex challenges.

The company also offers a measuring service, which makes it possible to assemble the chains on the system by perfectly matching them, to ensure maximum precision and uniformity of length. This prevents product waste by perfectly aligning dual strand conveying systems.

The main applications for ZMC Stainless Steel conveyor chains in the agri-food industry are in machines used to select fruit and vegetables according to size, weight and for processing and packaging products.

Bakery proofers are an integral part of the industrial process to produce numerous bakery products, including bread, crackers, breadsticks, rusks, pizza, bis-

cuits and sweets.

Depending on the size and characteristics of the product and specific performance requirements, the proofer can be developed in various ways, using vertical and horizontal Stainless Steel conveyors to carry the trays, baking tins or slats, on which the products to be leavened are deposited.

Fundamental parameters for the design of the system include speed, transported load, temperature and other environmental conditions, as well as scheduled maintenance. With the choice of various materials, including stainless steels of various types, heat treatments, coatings and special components, including bushings and bearings, it is possible to produce chains capable of working up to 500 °C.

The main configurations for food baking ovens with conveyor chains are horizontal wire net or slats. In wire net ovens, the chains are generally produced with hollow pins, while for the slats, a wide range of chains with attachments has been developed - some of which have protruding pins and outboard rollers. In this sector, ZMC's self-lubricating Mecasec® technology, can be used up to 250 °C.

BMG's Power Transmission division also supplies and supports other leading brands of chains, including Fenner, Tsubaki, Webb and Rexnord.

BMG recommends ZMC 50 mm pitch chain with protruding pins used in peeling machines in the canning industry. Other designs of recommended chain for this sector include hollow pins and protruding pins.

Bottle washer chains require high strength and long wear life without lubrication. For part of the bottle washing process the chain works immersed in water with diluted detergent and is often polluted by abrasive elements from the glass bottles, like dust and paper residues.

For high efficiency in bottle washing systems, BMG specialists recommend the use of high-performance stainless steel chains. ZMC bottle washer chains are available with attachments that have welded internal screws, for securely fixing the crossbars on which bottles are transported.

Other applications for ZMC chain are for conveyors in complex assembly lines in automotive manufacturing plants, cement production and in timber and sugar mills.

BMG's Power Transmission division also supplies and supports other leading brands of chains, including Fenner, Tsubaki, Webb and Rexnord.

SA expects smaller wine grape crop as harvest commences



Harvest time is under way. Photo credit: Opstal Wine Estate.

By Vinpro and SAWIS

WITH the 2022 harvest season on the horizon, South African wine grape producers expect a smaller wine grape crop, mainly due to a decrease in vineyards, high disease pressure and heatwaves in certain regions. This according to the second of four crop estimates by viticulturists and producer cellars in the third week of January.

"At this early stage, we expect this year's wine grape crop to be smaller than in 2021," says Conrad Schutte, manager of Vinpro's team of viticulturists who issues the crop estimates together with industry body SAWIS (South African Wine Industry Information & Systems).

"The South African wine industry is spread over a wide range of cultivation areas throughout the Western and Northern Cape, with often diverse climatic condi-

tions. Because of this variation, the crop is estimated upwards and others downwards in the respective regions," says Conrad.

The harvest is estimated to be smaller in most wine grape growing regions, except for Stellenbosch, the Cape South Coast and Klein Karoo. Conrad attributes the overall decline in the 2022 wine grape crop to vineyards being uprooted in especially the Northern Cape, Olifants River and Robertson regions, as well as high downy mildew and powdery mildew infections in some of these regions. The ripening period was cooler than normal, but heatwaves in December and January caught some vineyards off guard, causing sunburn damage to grapes.

Other than that, wine grape producers experienced an exceptional season.

Winter conditions were excellent, characterised by mostly

above-average cold units - as reflected by frequent snowfall on mountain peaks - along with higher-than-normal rainfall that supplemented groundwater levels. Due to a cool, wet spring, budding was seven to 14 days later than normal in general, but consistently good and even. The cool weather also delayed initial growth, but most vines caught up during flowering, which occurred about five days later than usual.

"There is always a great buzz around harvest time, and we are excited to build on the great quality wine grapes and wines that we've seen year on year in the vineyards and cellars," Conrad says. "We wish all of our producers, winemakers, viticulturists and their teams all the best for a prosperous 2022 harvest."

The next crop estimate by viticulturists and producer cellars will be released in the third week of February 2022.

New cassette seal extends wheel end life

WITH a new design of its MUD11 cassette seal for wheel ends, SKF has improved the seal performance by reducing both friction and dirt ingress and extended its service life, helping to prevent failure in agricultural and construction machinery.

"The improvements will help end users to increase productivity while reducing both maintenance and operating costs," says Vinay Joyappa, Global

Product Manager at SKF.

MUD11 seals protect wheel-end bearings, to prevent failure in equipment such as tractors and construction vehicles.

A typical example is seen at harvesting time, when farming machinery must maintain performance under punishing conditions. Wheel-end bearings in both front and rear axles must withstand heavy loads, plus dusty or dirty

conditions, for long periods of time. The MUD11 seal helps to overcome this.

New features of the seal include an optimised multi-lip design, an integrated metal sleeve and the use of SKF developed compound.

These refinements have increased its service life by up to 50%, while also reducing seal initial friction by around 20%. This can help OEMs and distributors to extend

wheel-end service life and reduce warranty claims. It can also remove the need for expensive shaft machining.

As well as excluding contamination more effectively, the new multi-lip design is easier to install than its predecessor. The new seal can be retrofitted into an existing envelope using a two-step assembly.

The seals also offer customers a number of sustainability benefits.

These include preventing lubricant loss; extending both bearing lifetime and seal service life; and reducing friction (leading to lower energy consumption).

Being available as a stock item makes MUD11 seals easily available through SKF's distribution network. This helps users to reduce customer inventories, while localised sourcing helps to cut import duties.



Calibration device for accurate temperature measurement

COMTEST is offering the Fluke 9190A Ultra-Cool Field Metrology Well, a small, lightweight, and accurate dry-block calibrator with best-in-class stability.

The 9190A is ideal for pharmaceutical, biomedical and food processing applications that demand strict quality control and regulatory process compliance, including on-location validation and calibration of RTDs, thermocouples, thermometers, and other temperature sensors.

The 9190A conforms to EURAMET cg-13 guidelines for best measurement practices for temperature dry-block calibrators. This ensures that the 9190A specifications for accuracy, stability, axial (vertical) uniformity, radial (well-to-well) uniformity, loading, and hysteresis have been thoroughly and carefully defined and tested.

It has a wide tem-



perature range (-95 to 140 degrees Celsius) to cover the coldest and warmest temperatures required in pharmaceutical, biomedical and food processing applications, operating at ultra-cold temperatures not typically available with a calibration bath. The 9190A uses no bath flu-

ids, keeping clean rooms clean, making it easier to transport, and delivering faster heating/cooling rates. It offers best-in-class temperature stability (plus-or-minus 0.015 degrees Celsius) for consistent, accurate results.

The 9190A with "process" option features

4-20 mA connectors, a reference thermometer input, 4-wire PRT/RTD input with an accuracy of plus-or-minus 0.02 degrees Celsius, and a reference sensor control to minimize the effects of the axial gradient when a reference PRT is aligned with short sensors.

Coding on flexible film for fresh fruit and veggies



WHETHER bagged, ready-to-serve, or on-the-go, consumers are looking for convenience, good shelf life and freshness when it comes to their fruit and veg. And to achieve this, flexible film offers an ideal packaging option to slow down the metabolism of fresh produce, extend its shelf life, and display products at their freshest.

To code these products, Thermal Transfer Overprinting (TTO) is a digital technology that was specifically developed for coding flexible film.

What is TTO?

According to Markem-Imaje, locally represented by Pyrotec PackMark, the main elements of a TTO printer are the print-head, the inked ribbon and the roller (for continuous applications), or the flat platen (for intermittent applications). When given a signal to print a pre-defined code, the print-head descends, pushing the ribbon and the packaging film against the roller. The heating elements related to the code heat up, melt the ink on the ribbon, and the melted ink is then transferred onto the packaging film.

The heating elements are embedded in a ceramic unit and individually heated to form characters such as letters and numbers. The ceramic unit protects the heating elements as they transfer the heat to the inked ribbon and print the message. Ceramic units vary in

their ability to withstand repeated heating and cooling cycles and to resist abrasion. Both factors affect print-head life and coding speed.

Why TTO?

Compared to mechanical approaches such as hot stamping or rotary coders, TTO provides greater uptime and less waste while allowing the inclusion of real-time data. Compared to other digital technologies, such as continuous and thermal inkjet printing, TTO is typically easier to integrate into the packaging machine and provides better print quality.

With a high resolution of around 300dpi – approaching the quality of preprinted packaging – TTO is versatile, allowing barcode, logo and 2D coding. Pack rates of up to 120 to 160ppm or 1 200mm/s are achieved on average though more advanced units can reach up to 455ppm or 1 800mm/s.

TTO is also reliable, it has a relatively small initial capital outlay, and it offers low maintenance and running costs. There is virtually no equipment warm-up time – it is ready within 60sec of being turned on. There is also zero risk of film perforation, unlike mechanical methods where broken stamps can pierce the packaging.

Thermal Transfer Smartdate X65-128

Designed for wide format printing applica-

tions, the SmartDate X65-128, available from Pyrotec PackMark, delivers high-resolution coding on flexible film packaging as fast as 400ppm. Its printhead characteristics make it ideal for wide messages such as ingredients and nutritional coding.

Its fully intuitive 10.1" user interface makes daily operations easy and straightforward while providing the most valuable information you need to optimise and improve your Overall Equipment Effectiveness (OEE) through MI Sigma reporting.

Main benefits include:

- Extended performance.
- Up to 128mm x 500mm printing area capacity with twice the amount of variable print versus a standard coder, thus reducing costs.
- Efficiency.
- Minimised time and effort as it prints multiple codes on multi-lane packaging lines on demand, quickly and efficiently.
- Code quality is ensured.
- Automatic print-head setup that optimises printhead lifetime and allows for dead-dot monitoring.
- Superior printing speeds.
- Print speed can be set from 10mm to 700mm/sec allowing for more than 400 printed packs per minute at 300 dpi.

Beverage processing technology meets innovation

THE global call to reduce CO2 emissions in production processes, including beverage production, has had a significant influence on technology innovations that use less energy and water. This is against a backdrop of an increasingly competitive landscape, growing environmental consciousness among consumers and increasing scarcity and rising cost of water, something of particular importance in water-scarce South Africa.

Tetra Pak responded to this demand from consumers and customers alike by devising an innovative solution for juice, nectar and still drinks production that combines existing technology in an entirely new configuration to drastically reduce energy, water consumption and costs. This groundbreaking solution was recognized by the International Fruit and Vegetable Juice Association and honoured with the "IFU 2019 Innovation Award" at the annual Juice Summit in Antwerp, Belgium.

To this end, Tetra Pak in 2020 introduced a new juice, nectar and still drinks (JNSD) production line that uniquely combines pasteurisation, filtration, and UV light to treat beverages in two separate streams, which are aseptically



blended together into the final beverage. "Water is treated separately with filtration and UV light, which uses much less energy. In the new JNSD line customers reduce energy consumption up to 67% and water consumption used for cleaning-in-place, sterilisation and product change-over is cut by up to 50%, compared to a normal process" says Hervé Saini, processing director at Tetra Pak Southern Africa.

Tetra Pak's proven lines for nectars and still drinks offer several major advantages. Starting in the pre-mix area, it offers a choice of different mixers adapted to the customer's specific product ingredients. It continues with a blending system that, together with its pasteurizer, secures the lowest possible product losses and ends with an aseptic tank

from which the product can be safely distributed to the filler.

Such improvements are supplemented by design adjustments to the food manufacturing process to reduce food waste. Manufacture of UHT (ultra-long life) products are the company's core business and a post-production means of reducing waste is increasing the shelf-life of food. "Product return contributes to CO2 emissions; therefore, food waste reduction is an integral part of our systems." He explains that shelf-life is governed, not by adding preservatives as it sometimes believed, but by the UV heating process and aseptic conditions of manufacture.

Hervé Saini notes that innovations by Tetra Pak are aimed at assisting customers to achieve their own sustainability

goals. Furthermore, they meet growing consumer demand for food quality, safety, and sustainability. Covid-19 has shifted consumer behaviours in several ways and juice consumption is no exception. For instance, an increase in demand has been evident in products which improve people's immune system, such as vitamin C in fresh juices.

Tetra Pak continues to see much potential for constant innovation. "We see new opportunities on the horizon, as our customers increasingly search for ways to lead a healthier lifestyle, and this trend has accelerated during the spread of Covid-19. The JNSD line meets innovation, efficiency and sustainability criteria and helps customers meet consumer demands while capturing growth opportunities."

Honeywell announces non-flammable refrigerant under 150 GWP

HONEYWELL has announced a new non-flammable refrigerant for medium temperature commercial refrigeration applications with a GWP (Global Warming Potentials) of less than 150.

The arrival of R471A, which Honeywell has branded Solstice N71, could provide a solution to end-users struggling to comply with new standards, including those in the UK, EU and California that restrict refrigerants with a GWP greater than 150 in new systems.

Since January 1 of this year, the European F-gas regulations have banned the placing on the market of new hermetically-sealed commercial refrigerators and freezers from using a refrigerant with a GWP of 150 or more. The same ban applies to multipack centralised commercial refrigeration systems with a

rated capacity of 40kW or more. The US Environmental Protection Agency is also said to be considering a similar national regulation that may take effect in 2024.

Medium temperature

Although only promoted for medium temperature applications, the new R471A seeks to provide an answer for many premises in the UK and Europe that strictly prohibit the installation of any equipment containing a flammable substance.

R471A is an A1 blend of the low GWP HFOs R1234ze(E) and R1336mzz(E) (78.7% and 17%, respectively) with 4.3% of the fire suppressant HFC227ea. This combination gives it a GWP of 148.

In a statement, Honeywell says: "Solstice N71 provides superior eco-efficiency com-

pared with both traditional R-404A stores and CO2-based systems allowing customers to meet their sustainable goals while utilizing conventional equipment. In particular, Solstice N71 provides substantially stronger energy performance in medium temperature applications boasting a 13% reduction in energy usage against R-404A and over 30% energy reduction vs CO2-based systems according to Honeywell modeling."

R134a replacement?

R471A has been around for a couple of years and was first mentioned in Bitzer's Refrigerant Report 21 published in 2020. While Honeywell's latest announcement only mentions its performance compared to R404A, it has also previously been seen as a replacement for R134a.

Keeping it cooler by conserving resources

THE financial and economic costs of mainstream energy sources are on everyone's minds these days. Between NERSA and ESKOM, the costs of conventional electricity are spiralling out of control. Companies are under pressure. And so is our environment. Then, of course, there's the reliability factor. After years of load shedding and rolling blackouts we can no longer take municipal/national supply for granted.

And for a company that relies on consistent refrigeration 24/7, CCS Logistics decided a number of years ago to be proactive - by addressing inefficiencies, implementing alternative solutions, embracing new technology, and creating a culture that planned and behaved responsibly in terms of power consumption.

This is in line with the company's commitment to environmentally sus-

tainable operations that support Environmental, Social and Governance (ESG) objectives. Ina Botha, Executive Director of CCS Logistics, explains that their Environmental Management System allows them to measure and manage consumption against industry benchmarks and targets. The focus remains to reduce energy consumption which has direct cost-saving benefits.

The solar installation at their Paarden Eiland facility, for example, delivered a saving of over 30% within the first few months, which is more than the forecasted project delivery plan. And with even more electricity hikes planned for the near future this saving is going to keep on accelerating. This investment in solar energy is being rolled out across some of their other facilities.

CCS Logistics has also invested in an

energy management system which monitors cold room temperatures and electricity usage in real time. The system senses if maximum electrical demand is about to be exceeded and optimises usage to deliver required efficiencies.

Another successful strategy they've implemented is the reduction of energy consumption through behavioural change of staff, which is a lot less capital intensive. Low-cost methods include targeting user discipline and plant operation, which has reduced energy consumption by more than 34%.

When Cape Town was faced with the prospect of Day Zero in 2018, CCS looked at alternative sources of water supply and treatment in several of their facilities. Potable municipal water use was reduced by an average of 49% which equates to the water

use of 4 000 households. They have also started using water from defrosting cycles and underground water as an alternative to municipal drinking water.

Further projects planned for 2022 and 2023 are a desalination plant at the Namibia facility to reduce the dependency on freshwater resources; and harvesting rainwater. They also invested in flow limitation devices to reduce waste.

Tracking and managing waste is also part of their environmental management initiatives. By separating waste streams and optimising recycling they significantly reduce landfill. Hazardous waste such as oils are also sent for recycling and over R1 million was invested in replacing equipment using conventional compressor oil with equipment that use environmentally friendly base oils.

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Innovative vehicle tracking

CTRACK is a South African company with solutions developed locally through continuous research and development. South Africa's challenging business environment the last two years has meant that Ctrack's product development had to meet a unique set of conditions experienced

by fleet operators. The cornerstone of Ctrack's offering revolves around five keys of fleet management solutions: Risk, Cost Control, Fleet Utilisation, Operations Control and Asset Control. Ctrack's high quality, reliable fleet specific in-cab solutions that

operate with Ctrack's On-The-Road application are now also available for mobile Android devices, eliminating the need for a second piece of hardware inside vehicles. A basic Android 6 device with 2GB RAM, an internal GPS and Bluetooth will suffice. The OTR solution combines navigation and

fleet experience into a platform that integrates with Ctrack's software platforms for easy data extraction. Drivers are a key part of running fleets successfully and efficiently, and Ctrack's OTR solutions allow drivers to complete their daily tasks as required. Features include driver

behaviour monitoring, navigation, driver status, messaging, task management, voice calls and behaviour history. This new development saves operators money whilst empowering their drivers with a powerful tool in hand. With Ctrack's SMILE software, operators can create

efficiency and risk outputs that measure and solve an operator's critical KPI's in a variety of ways. Risk-reducing technology such as gun-fire detection or foam encapsulation technology has the ability to match various planned delivery addresses, ensure complete control of high-risk pack-

ages and leads to monitoring and reporting options in the Online Software platform. This ability creates the option to immediately activate risk mitigation actions, reduce risk, and improve customer service levels. The same system used within agricultural sectors, such as the milk industry, allows fleet managers to set up geo zones with pre-defined speed limits on certain routes. Speed can be controlled on gravel roads by activating a speed limiter. These simple yet effective actions reduce wear and tear on the vehicle, reduce warranty claims, and in essence, less time for the vehicle spent in workshops. The uptime of the vehicle again brings about improved vehicle efficiency and pushes service levels to the next level within service level agreements for fleet clients.

Driver fatigue is a very serious problem with high demand on production and service delivery. By creating a SMILE script to monitor the driving hours, the Ctrack device can be configured to audibly alert the driver when driving time limits or distance is reached. If the driver chooses to ignore warnings, the Ctrack technology, through the SMILE script, can put the vehicle into limp mode (reduced speed and engine power) to ensure that the driver takes the required break.

The unscrupulous practice of jamming directly impacts fleets' risk and interferes with the transmission of telematics data preventing the tracking of vehicles or assets as part of a stolen vehicle recovery attempt. Ctrack's jamming detection technology reacts accordingly by implementing several mitigating protocols.

The Live Productivity Dashboard, which forms part of the online software suite, provides a 24-hour timeline of vehicle or asset movement, allowing for quick and easy dissemination and management of fleets. Users can view the movement and stationary times as well as driving times in a single graphical view. Stopping locations and operating times allow fleet managers to quickly identify unauthorised usage of vehicles.

Ctrack's Fleet Monitoring Service is a complete outsourcing option of fleet control room activities and a perfect solution for managing larger fleets.



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Safety on top of mind for SA line haul industry

By David Poggiolini

SOUTH Africa's line haul industry is on par with those of First World countries. This is also evidenced by the industry's heightened focus on safety, which has become the most important consideration for many line haul operators when purchasing new trucks. "The industry has evolved at a significant pace over the years. Previously, buying decisions were predominantly driven by the bottom-line, with productivity and efficiency the main focus for road transport logistics operators. While safety was always an important consideration for road-haulage companies, it is now the principal driver behind truck purchasing decisions. Productivity and efficiency, although still critical considerations, play a secondary role in decision making,"

Maretha Gerber, Vice President: Sales and Marketing of Daimler Trucks & Buses Southern Africa, tells Cape Business News.

Mercedes-Benz Trucks has retained a leading position in the heavy-duty truck market segment for two consecutive years now. The company has continuously exceeded its expectations of capturing a significant share of this segment of the market. This can be attributed to, among others, the company's ongoing commitment to safety. Mercedes-Benz Trucks' focus on safety spans other road users and the truck driver through to the cargo that is being transported over long distances. This is in addition to safeguarding against fuel theft.

Certainly, the uptake of the new generation Mercedes-Benz Actros by the country's top third-party logistics providers since its launch four years ago



Maretha Gerber.

bears testament to the level of sophistication of the South African line haul industry.

Gerber says, "It has demonstrated once again that the industry, including the skills of our drivers, is also of an exceptionally high standard. This has also been corroborated by

our parent company in Germany. While there have been doubts about the suitability of very sophisticated truck technology for local operators, the popularity of the new generation Actros dispels this notion. The only factor that prevents us from launching the lat-

est international truck technology in South Africa is the current emission legislation in South Africa. We first need legislation regarding clean fuels in the country to enable the launch of these technologies in the country. Unfortunately, the introduction of such legislation has been delayed, despite the tremendous fuel efficiency gains that are achievable using our latest truck technology. This is not to mention the significant positive impact that these technologies will have on the environment by reducing the carbon footprint of road transportation."

Among the latest innovation from the company that is helping to improve driver performance, including safety, is Predictive Powertrain Control (PPC). PPC integrates a driving style that is optimised for the route topography into the operation of the truck's

automated transmission. The system also utilises 3D maps, optimising shift points, gear steps and set cruise control speed. Kinetic energy that is generated by the truck is used to avoid unnecessary acceleration, shifting or braking. This means that cruise control can be used in just about any driving situation.

Meanwhile, MirrorCam technology has also significantly improved driver visibility outside and inside the cab. When the truck is moving forward in a bend, a camera on the inner side of the curve pans so that the driver always has a clear view of the end of the trailer. When manoeuvring in reverse, the MirrorCam switches to a special moving view, also displaying distant areas in the vicinity of the truck in their correct scale. This view is automatically activated when the vehicle is placed in reverse gear and remains displayed

in forward gear up to a speed of 10 km/h or until deactivated. By removing the large external mirrors that often hinder visibility, the driver also has an unobstructed view in front of the vehicle.

Gerber concludes that the state of roads and safety in the country remains of concern and that truck original equipment manufacturers – as a vital component of the road transport logistics value chain – have a large role to play in helping to improve the situation. "We are also playing our part by providing the correct truck for specific applications. This, in turn, is strengthening the South African transport logistics industry, the lifeblood of the economy. A strong economy will also bolster government which will then be in a better position to enforce road safety and improve our deteriorating road network."

Executive Mayor reviews progress at IMMP



Executive Mayor Eugene Johnson (foreground) visiting the Isuzu Motors manufacturing plant.

NELSON Mandela Bay Executive Mayor Eugene Johnson visited Isuzu Motors South Africa's manufacturing plant to preview the R1.2 billion investment which will see the new generation Isuzu D-MAX, and truck upgrades, launched this year.

New production lines have been constructed over the past two years to ready the production facilities for the construction of new Isuzu light commercial and heavy commercial vehicles.

The investment also involves significant upgrades to tooling and equipment, as well as refurbishing the current line to support an extension in the manufacturing

of current Isuzu models. In addition to the upskilling and training of staff, Isuzu has also embarked on rigorous testing of vehicles to ensure Isuzu's promise of producing durable, reliable, and capable vehicles re-engineered for African driving conditions.

Billy Tom, President and CEO of Isuzu Motors South Africa, updated the mayoral delegation on the progress made on the investment, including upgrades to the manufacturing plant to meet the new vehicle requirements and the state of readiness to launch exciting new Isuzu products into the market.

"The R1.2-billion investment into Isuzu's next-generation bakkie

programme in South Africa, for the South African and Rest of Africa markets, is one of the reasons the manufacturer has been able to secure about 1 000 jobs directly at Isuzu's operations in Gqeberha, and across its national and international dealer network, as well as around 25 000 jobs at hundreds of suppliers across the country," said Tom.

Executive Mayor Eugene Johnson said, "As a key revenue generator, the automotive sector is one of the most important industries for us as a metro. We need this industry, with a strong revenue from companies like Isuzu it means we can secure jobs and our citizens' livelihoods".

South Africa is the 18th largest manufacturer of vehicles in the world and the automotive industry is the third largest sector in South Africa, contributing 5.7% of the national GDP. The country produces 80% of Africa's vehicle output.

Towards the end of last year Isuzu launched the new seven-seater mu-X SUV. The new Isuzu D-MAX bakkie will be launched in the first quarter of this year, with the launch of Isuzu's next-generation trucks following shortly thereafter – all locally manufactured in Gqeberha.

Audi to roll out ultra-fast 150kW EV charging in SA

AUDI SA in partnership with GridCars has made an undisclosed investment to install ultra-fast charging stations across the country through publicly accessible sites.

The 150kW public chargers initiated by Audi will be the first for the South African market. The charge points will provide up to 150kW of direct current (DC) to charge electric vehicles; meaning that its Audi e-tron 55 (with a 95kWh battery) will charge from 10% to 90% in approximately 30 minutes.

As part of this, Audi will invest in setting up 70 new EV charge connectors across 33 sites in order to expand on the existing public charging network in South Africa, for all electric vehicle drivers.

Local public charging

These publically accessible charging stations will offer all EV consumers, regardless of vehicle ownership, the latest, state-of-the-art charging technology available in South Africa.

Investing in the country's charging infrastructure to support the shift to future EV ownership is critical to its success. Audi says that the



installation of the local charging project has already commenced and includes:

- Four 150kW (DC) ultra-fast charging stations, enabling +/- 340km in 30 minutes. These are planned for placement along major highway routes such as the N1, N2, N3 and N4.
- Five 80kW (DC) fast charging stations, enabling +/- 185km in 30 minutes, also planned for location on major highway routes such as the N1, N2, N3 and N4. One of these chargers will close a long-standing gap (Richmond) in

the route between Johannesburg and Cape Town.

- Twenty-four 22kW (AC) fast charging stations, enabling +/- 100km in about one hour, at public lifestyle and recreational venues across the country.
- A total of 70 connectors will be available from the above charging stations, further growing the public charging opportunities for all EV drivers.

"GridCars, established in 2009, operates and manages the most extensive network of public charging stations across the

country and the partnership and additional investment with Audi not only expands the network, but allows it to be upgraded with additional ultra-fast charging opportunities is a first for our country, for all EV drivers, regardless of brand or vehicle model.

The possibilities for EV adoption in South Africa are already positive and through this partnership with Audi South Africa, we are hoping to further progress the EV journey and tackle the challenges around charging, range and accessibility," Winston Jordaan, Managing Director at GridCars explains.

Freight and cargo insurance – a neglected safety net

**Detlev Duve –
Managing Director,
Dachser SA**

AS logistics involves a network of different partners, goods may pass through multiple transfers, different service providers and various modes of transport en route to the end destination. Most of the time, freight is transported by air or sea without issues. However, all transport carries an element of risk – and it's important to know that your goods are not automatically covered against damage, theft or loss by liability insurance alone. The additional combination of both freight and cargo insurance provides an essential safety net. Due to the complexity, this should be applied for by an experienced partner in logistics.

Liability coverage protects the carrier or freight forwarder, but does not generally cover damaged cargo. The carrier or freight forwarder can only be proven liable if damage

or loss occurs through clear mistakes or negligence during transport. The extent of the carrier's liability is however limited, and the maximum amount of compensation they are required to pay usually will not equate to the value of the shippers goods or products.

With good freight insurance in place, you do not need to prove that the carrier or freight forwarder damaged your shipment, you simply must submit a claim stating the damage, with your proof of value and loss. While liability coverage must always be in place, insurance for freight shipments is not a legal requirement. However, just as one wouldn't drive an uninsured car, going without freight insurance can simply be too risky. Unlike car insurance where policies are more standard, freight insurance is complex and specific contracts should be drawn up in each case by experienced brokers. Each policy is going to cover different types



of damage, materials, claims, and deductibles.

Even if your forwarder is liable, compensation provided by freight insurance will still only cover a small percentage of the value of your goods. As freight insurance cover is calculated on the basis of the weight of the goods, the same amount would be paid out for one kilogram of platinum as it would for one kilogram of paper. Enter cargo insurance, which can be taken to cover the full value of a shipment while it is in transit, protecting the customer. Confusing freight insurance and cargo insurance and

assuming that shipments are covered by freight insurance for their full value in the event of loss or damage, can be a costly error.

Where the responsibility lies for goods in transit depends on whether you are the shipper or the buyer, and on the sales agreement governing the terms of transportation. The International Commercial Terms of 2020, or Incoterms® are rules governing the sale of goods around the world, including shippers' liabilities and responsibilities. An international sales agreement should always include one of the Incoterms® clari-

fying where responsibility for cargo insurance lies between buyer and seller at the different stages of transit, and when the risk passes from one party to the other.

Commonly used Incoterms® include:

EXW (Ex Works): The buyer bears the risk and insurance costs from the export customs clearance stage, through to receipt of goods.

FOB (Free On Board): The seller is responsible for risk and cost until the goods are loaded onto the cargo vessel or aircraft. At that point, the risk and cost transfer to the buyer.

CIF (Cost, Insurance, and Freight): The seller accepts risk up to the point the goods are loaded onto the cargo vessel or aircraft. The seller also pays the cost of insurance until the goods reach the port of discharge. The buyer shares the cost at the port of discharge and has sole responsibility for cost and risk from then onwards.

Whether you're an importer who has paid for goods prior to receiving them or a seller who has not been paid at the time of shipment, cargo insurance reduces your risk of financial impact if the goods are lost or damaged during transit. As with freight insurance, cargo insurance claims can be invalidated if not made within specified timeframes and the submission of claims should be carefully managed.

Cargo insurance can also expedite the release of your cargo should an accident occur, although your goods may not be damaged. Should particular accidents

occur to the vessel, all parties share in the loss equally, under the General Average principle. By purchasing insurance, your insurance company assumes this responsibility and expedites the release of your cargo.

As a logistics specialist in Africa, Dachser South Africa is responsible for coordinating almost every aspect of customer's shipments. It makes sense for us to handle the cargo insurance too as a value-added service. Dachser South Africa has partnered with a specialist in freighting insurance as part of our commitment to our customers. We negotiate contracts, pay the premiums and submit claims on behalf of our customers, managing correspondence until a settlement is reached. Shipping to unfamiliar destinations that do not have well-organised infrastructure can add to the risk factor. While damage and loss is rare, it can be very expensive, making insurance costs money well spent.

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2022 – will we finally see crypto regulation in SA?

By Wiehann Olivier, Digital Asset Lead and Partner at Mazars South Africa

WHETHER to regulate the crypto industry or not is an ongoing debate, but most informed stakeholders believe we need a regulated environment to further grow the industry and provide protection and recourse to consumers.

From a growth perspective, a regulated crypto industry could increase overall adoption and give birth to a new sub-sector of publicly traded funds holding crypto as their underlying assets as we have seen internationally with the hype around ETF's (Exchange Traded Funds).

That said, it is paramount that these regulations do not stifle innovation.

Currently we have no idea what local crypto industry regulations will look like. But there have been rumours of what regulators are planning to impose and that they will do so within the second or third quarter of 2022. The big question is whether virtual asset service providers ("VASPs") are agile enough to organise themselves operationally to be able to adhere to these laws and regulations.

What is the possible impact on both VASPs and their customers?

In the case of Binance, regulations had such a massive operational impact on their business that the knock-on effects resulted in their customers trading accounts being closed by the 13th of February 2022.

In South Africa, where the crypto industry currently remains unregulated, we are fortunate to have been able to



ant from an overall regulatory standpoint and have the necessary Know Your Client (KYC) and Anti Money Laundering (AML) policies and procedures in place.

Hopefully we will also see amendments made to the Income Tax Act during February, possibly including crypto investment bundles as part of the collective scheme of investment, or further guidance from SARS as opposed to merely stating that "the ordinary rules apply".

Who will be left standing?

Since the introduction of Bitcoin in 2009, the biggest reason for cryptocurrency exchange failure internationally has been as a result of security hacks. Not far behind however, has been their inability to adhere to the applicable laws and regulations.

When regulations kick in locally, and the industry is increasingly actively monitored from a compliance perspective by the FSCA and other watchdogs, some of these VASPs will likely drop out of the race due to compliance struggles – as we have seen internationally. This illustrates the importance for stakeholders to understand their preferred VASPs stance on regulations and in doing so mitigate their risk of being affected.

To remain in the game it is imperative that VASPs proactively manage ongoing regulatory risk as opposed to trying to play catch up and eventually falling behind once regulations are imposed. What remains to be seen is whether it will only be the larger VASPs left standing or if there is scope for smaller players in a regulated crypto industry.

observe other regulated jurisdictions and learn from their mistakes.

At the moment, South African VASP's must adhere to general regulations including, but not limited to, the Companies Act, Statutory Audits, Tax Administration, VAT and Income Tax Act and Exchange Control regulations. But, as soon as crypto-specific regulations are introduced they may also need to adhere to the Financial Intelligence Centre and Financial Advisory and Intermediary Services Act. With "normal" financial service providers already navigating this regulatory mine field for years, VASPs will need to catch up quickly.

In addition, VASPs will come under increasing compliance pressure from commercial banks who are the lifeline for most of them; creating a bridge between fiat currencies and cryptocurrencies. Over the last couple of years we have seen certain commercial banks in South Africa implementing blanket bans for servicing VASP's. Others have followed an alternative strategy by ensuring that their risks are mitigated by demanding that their VASP clients are compli-

South Africans are turning to side hustles – here's what the law says

Attorneys Cliffe Dekker Hofmeyr discuss the legal implications.

WITH the ravages of the Covid-19 pandemic still being felt, a growing number of South Africans in full-time employment are taking on a 'side hustle' to supplement their income.

Remote working has also provided employees with a great opportunity to engage in secondary jobs, especially where once being at the office may have been a hindrance.

Data from the Momentum/Unisa Household Index shows that an estimated 14% of households obtain an additional income from a side hustle. The majority (88%) of these households have one side hustle, while 12% have two or more.

Moonlighting is when employees, during their own time (or even during employer time), and outside working hours of their primary employment undertake to offer services to another employer for reward.

A side hustle is typically defined as additional work which a person is more passionate about than their full-time day job that supplements their income.

Contracts

South African law does not explicitly preclude an employee from earning an additional income, and the general principle is that an employee cannot be unreasonably kept from supplementing their income.

To prevent uncertainties in the work-



place, employers typically regulate this practice by expressly prohibiting a secondary occupation in employment contracts, workplace policies and/or collective agreements.

This is mostly considered as best practice, and employers who do not have these forms of restrictions, are advised to do so, especially in the existing economic climate.

In addition, an employer may also limit the practice by providing that an employee must disclose the practice in advance and that it would be subject to the employer's discretion for the employee to continue with their additional venture.

What if there's no clause?

If a prohibiting clause or workplace policy does not exist, an employee may have a secondary job provided that it does not contravene the standards of the primary employment relationship.

Additionally, it should be stipulated

that there is no conflict of interest with the primary employer and the primary employer is not prejudiced for instance by the employee incapacitating himself in some form by reduced output or performance.

At the heart of the employment relationship are trust and confidence, and an employee is expected under the law to be honest, loyal and promote the business in the best interests of the employer.

If the employee's secondary job compromises the employment relationship it may result in possible disciplinary action and dismissal depending on the circumstances. The Labour Appeal Court has held that for moonlighting to be effectively prohibited there must be a specific rule stating that it is not permissible, and the rule should be known to employees.

There have also been instances where an employee takes sick leave to attend to their secondary job.

When an employer suspects this is occurring in the workplace, the employer should conduct a fair investigation. Where the conduct is established in addition to moonlighting the employee would be guilty of dishonesty or fraud which would be a basis for dismissal.

Employees who moonlight or 'side hustle' should do so with eyes wide open. Employers who do not regulate moonlighting or 'side hustles' should do so, as it is important to establish clear boundaries in the employment relationship."

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The first-hand truth about Tutu

AAH, February, the month of sunshine and Saint Valentine!" beamed Luke the Dude at the chilled conversationists congregating in the sunny garden of Karmenaadjie – the late local Pub & Grill being no more. (Personally, I prefer the leafy evening sunshine to second-hand smoke in semi-darkness.)

"So what's up, Prof?" continued Luke, "did you manage to get David Benatar's book on the Fall of UCT?"

"I did indeed," nodded The Prof while frowning at his uncooperative pipe. "And it was everything I expected from my esteemed colleague – detailed, thoughtful and entirely convincing. You should read it."

"Now why would I do that?" winked Luke the Dude, "when I have you to tell me about it?"

"Harrumph!" opined The Prof. "You know, Lucas my boy, I may just indulge your laziness and do so. But now I want to hear from our friend who chronicles our sins and solutions for the readers of Cape Business News. Much has been written about Archbishop Desmond Tutu after his passing, some of it quite controversial. Did you ever meet him, Peter old boy, in your many years as ace reporter?"

"Easy with the Ace in these Magashule times please," I replied (please forgive me, dear reader, for quoting myself, just reporting what happened), "and yes I did meet him – first as Bishop of Johannesburg and later as Archbishop of Cape Town."

"Well, pray tell us," asked The Prof in his humble manner, "what is your experience of him?"

So I did. Here goes:

The first time was in Johannesburg

while I was reporting for The Star, in those days one of the biggest and best dailies in the world. John Allen, my colleague and friend, was the religion reporter and knew Tutu well. But he had to go off on a trip and I was given the job to interview the already famous / infamous bishop.

I asked John for a quick briefing and some Anglican details such as, "What should I call him?" No problem. "Just call him Father." Well, I muttered, my mother won't like that, but I suppose "Dominee" won't do. "Correct," confirmed John.

I could not reach Tutu by telephone and, as it was getting frustratingly late, I took off for Braamfontein with the address of his office. There I found the building already locked for the night, but on the fifth floor one office had a light on. R2 then meant the same as R20 now, and that, together with a friendly smile and a humble request for help, got me past the guard and through the door, where I made my way upstairs.

On the fifth floor the light identified the office. I had no reason to believe it was Tutu's office, but it was the only chance I had. So I knocked. On the "Come in" I opened the door and there he was – sitting behind the bookish desk, not looking up and earnestly studying the pages in front of him. I waited. It took a while.

When he did look up, he was startled to see a big, bearded stranger. "How did you get in?" he demanded. Those were the times when Rick Turner was assassinated and Steve Biko died in the back of a police truck. I smiled, said that the kind security guard had relented and let me in, introduced myself as from The Star, conveyed John Allen's best wishes and apologized for disturbing him as

he was obviously working late.

Then he relaxed, invited me in and offered me a chair. I stated my business and he graciously and in detail answered my questions. That done, I asked him to indulge my curiosity as to what had kept him at the office so late. "Oh, he said, looking at the book in front of him, I am reading The Bible."

"Yes," he explained when he saw my surprise, "this is the best time. There's nobody around, the phone doesn't ring and I can concentrate." I thanked him for his over-time-time, wished him a safe drive home and left, closing the door behind me. How about that, I thought, working overtime to read The Bible.

"Thank you," pondered The Prof, "the reason I asked is a recent article by John Kane-Berman on the Daily Friend, where he expertly critiqued Tutu's Truth Commission – and I saw that you had reacted in the Comments section."

"So I did," I replied, adding the context:

My reaction was not to John Kane-Berman's article, which is an admirable piece of journalism. It was to one of the social media trolls who grabbed the opportunity to feel important as a commentator. This person claims to have served at something he calls the "South Intelligence School", which, of course, makes him a fundi on underground ANC/MK operatives of the 70s and 80s. But the "school" evidently fed him propaganda agnostic to the facts, which did annoy me. So I reacted along these lines:

"Tutu never spurred crowds on to armed struggle, as you fabricate. He did the opposite, I was there. Tutu often took the stage, or whatever served as one, when crowds

OPINION

ON THE CONTRARY

The columnist is a
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Pieter Schoombie



were on a knife-edge leaning towards mob violence – and then slowly, reassuringly, he gained their confidence and led them into disciplined, non-violent protest. And after that, they went home. That I personally witnessed time and again as political journalist in the 80s. And you have the temerity to spread your vicious falsehoods, sinking all the way to the slander that Tutu "was the MK underground commander in the Western Cape at one stage". How despicably, maliciously wrong.

"The truth is, again, the opposite of what you say. For example, After the FW de Klerk government lifted the bans on the ANC and others and scrapped the last apartheid laws, some young Anglican priests were keen to join as ANC activists. Tutu said fine, of course you are free to do so, but only when you resign from the priesthood. You cannot serve both masters, no matter who the other master is." And that is the truth about Archbishop Desmond Tutu.

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How big does your quantum computer need to be?

By American Institute of Physics

QUANTUM computers are expected to be disruptive and potentially impact many industry sectors. So researchers in the United Kingdom and the Netherlands decided to explore two very different quantum problems: breaking the encryption of Bitcoin (a digital currency) and simulating the molecule responsible for biological nitrogen fixation.

In AVS Quantum Science, the researchers describe a tool they created to determine how big a quantum computer needs to be to solve problems like these and how long it will take.

"The majority of existing work within this realm focuses on a particular hardware platform, superconducting devices, like those IBM and Google are working toward," said Mark Webber, of the University of Sussex. "Different hardware platforms will vary greatly on key hardware specifications, such as the rate of operations and the quality of control on the qubits (quantum bits)."

Many of the most promising quantum advantage use cases will require an error-corrected quantum computer. Error correction enables running longer algorithms by compensating for inherent errors inside the quantum computer, but it comes at the cost of more physical qubits.

Pulling nitrogen out of the air to make ammonia for fertilizers is extremely energy-intensive, and improvements to the process could impact both world food scar-

city and the climate crisis. Simulation of relevant molecules is currently beyond the abilities of even the world's fastest supercomputers but should be within the reach of next-gen quantum computers.

"Our tool automates the calculation of the error-correction overhead as a function of key hardware specifications," Webber said. "To make the quantum algorithm run faster, we can perform more operations in parallel by adding more physical qubits. We introduce extra qubits as needed to reach the desired runtime, which is critically dependent on the rate of operations at the physical hardware level."

Most quantum computing hardware platforms are limited, because only qubits right next to each other can interact directly. In other platforms, such as some trapped ion designs, the qubits are not in fixed positions and can instead be physically moved around—meaning each qubit can interact directly with a wide set of other qubits.

"We explored how to best take advantage of this ability to connect distant qubits, with the aim of solving problems in less time with fewer qubits," said Webber. "We must continue to tailor the error-correction strategies to exploit the strengths of the underlying hardware, which may allow us to solve highly impactful problems with a smaller-size quantum computer than had previously been assumed."

Quantum computers are exponentially more powerful at breaking many encryption techniques than classical computers. The world uses RSA encryption for most of its secure communication. RSA encryp-

tion and the one Bitcoin uses (elliptic curve digital signature algorithm) will one day be vulnerable to a quantum computing attack, but today, even the largest supercomputer could never pose a serious threat.

The researchers estimated the size a quantum computer needs to be to break the encryption of the Bitcoin network within the small window of time it would actually pose a threat to do so—in between its announcement and integration into the blockchain. The greater the fee paid on the transaction, the shorter this window will be, but it likely ranges from minutes to hours.

"State-of-the-art quantum computers today only have 50-100 qubits," said Webber. "Our estimated requirement of 30 [million] to 300 million physical qubits suggests Bitcoin should be considered safe from a quantum attack for now, but devices of this size are generally considered achievable, and future advancements may bring the requirements down further."

"The Bitcoin network could perform a 'hard-fork' onto a quantum-secure encryption technique, but this may result in network scaling issues due to an increased memory requirement."

The researchers emphasize the rate of improvement of both quantum algorithms and error-correction protocols.

"Four years ago, we estimated a trapped ion device would need a billion physical qubits to break RSA encryption, requiring a device with an area of 100-by-100 square metres," said Webber. "Now, with improvements across the board, this could see a



dramatic reduction to an area of just 2.5-by-2.5 square metres."

A large-scale error-corrected quantum computer should be able to solve important problems classical computers cannot.

"Simulating molecules has applications for energy efficiency, batteries, improved catalysts, new materials, and the development of new medicines," said Webber. "Further applications exist across the board—including for finance, big data analysis, fluid flow for airplane designs, and logistical optimizations."