

Business News

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Taking the fat out of fatbergs

In this CBN exclusive, Editor Robin Hayes speaks to South African entrepreneur and former Western Cape resident, **Chris Clemes** about his ground breaking technological solution which alleviates the problem of FOG (fat, oil & grease) sewer blockages and disposal, creating value to a valueless product while saving costs, water, transportation and the environment.

As an added bonus, the containerised, modular plant that is the heart of the system is manufactured right here in Paarl by metal fabrication specialists **Fabrinox** and soon to be exported worldwide.



Eco Clarity unit under test at Fabrinox works in Paarl.



Chris Clemes.

THE problem faced by water and waste water utilities the world over is that of the disposal and or illegally dumped FOG entering sewer systems, which often leads to the formation of sewer blocking 'fatbergs' (see box below).

After several years of development, a solution has been created through a patented technology developed by UK based Eco Clarity, the company formed by South African, Chris Clemes.

While the pioneering development work and the initial target market for this technology is the UK, strong interest has been

shown by European utilities, especially in The Netherlands where a pilot plant has been operating for more than a year, and 'back home' by Western Cape municipalities.

All food service establishments (FSE) – restaurants, cafeterias, fast food outlets, industrial kitchens etc., and filling stations are required by law to incorporate grease traps into their waste water systems as a preventative measure to stop FOG from entering the downstream sewer system and wastewater treatment plant. FOG is collected in their Grease Trap, and this

Grease Trap must be cleaned regularly to avoid overflowing into the downstream sewer network. This waste is collected by hauliers and is referred to as Grease Trap Waste (GTW).

The disposal of this waste is as problematic here in South Africa as it is in the UK, although the volumes are much greater there and the distances between a declining numbers of certified disposal sites presents logistical and financial issues and has led to illegal dumping. This is where the Eco Clarity technology GTW consolidation hubs seems set to solve this dilemma.

A boer maak n 'plan!

"Eco Clarity is revolutionary approach to Grease Trap Waste (GTW) management. With our patented technology we can accept and process large volumes of GTW in real-time. By forming a network of convenient GTW Consolidation sites, we can reduce time and logistic costs for GTW hauliers, thus attracting large volumes of Grease Trap Tankered waste to these sites" explained Clemes.

Continued on P2

3 000 tanks in 27 countries, and counting



WITH over 23 years' experience in the water security sector, SBS is a leading provider of adaptive food and water security solutions and has installed over 3 000 modular water storage tanks and grain handling and storage solutions across 27 countries including South Africa, several African countries and as far afield as the United Arab Emirates, America and Australia.

Delivering a quality offering to a global market, from engineered design and manufacture to installation and ongoing aftersales service, the SBS Group has sought ways to expand the existing product range to meet and exceed the needs and expectations of its customers and target markets, with the philosophy of always building better.

In a time when many businesses are keen to showcase their humanitarian and environmental credentials, SBS believes in positively impacting business and communities with the inherent belief that doing good is akin to doing good business. The SBS vision is to continue to grow the company's global footprint, become internationally recognised for premium solutions, and partner with businesses around the world, to enable them to utilise food and water resources more effectively, while activating the potential in people. Wherever a business or organisation needs to harness and secure food or water resources, SBS is equipped to assist.

Product differentiation

SBS is a proudly South African company that is ISO 9001:2015 and ISO

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Upon cooling, FOG congeals and solidifies, accumulating on pipe walls and potentially forming hardened deposits. Fatbergs lead to a reduction in sewer conveyance capacity and ultimately to sanitary sewer overflows that cost water utilities globally hundreds of millions of Rands each year in reactive cleaning, repairing, and maintenance fees.

Eco Clarity's Hubs have a small footprint of 10m2, made up of an automated Huber solids screen, two 6m treatment containers, and a 6m FOG post processing and storage container.

A standard Eco Clarity GTW Hub, is capable of accepting 10 tons of GTW in 10 minutes, with a further 10 ton truck each 15-20 minutes thereafter. Being automated the system is able to receive waste 24/7. With a quick setup, the Eco Clarity GTW Conversion Hub was ready to process waste within three days of delivery.

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CAPE
Business News

Taking the fat out of fatbergs

Continued from P1

“Our small footprint, containerised, low energy plants enable the legal disposal of GTW at almost any wastewater treatment works site. With reduced travel times GTW haulers can spend, less time driving to distant disposal locations, and more time servicing their FSE customers, thus reducing spills into the downstream sewer networks, reducing blockages and associated reactive clean-up costs.”

From no value to a high value win-win

FOG is defined as the lipid rich material generated during cooking and food processing having a high calorific content making it an ideal feedstock for energy recovery which in the UK and EU qualifies for triple counting renewable energy directive (RED) credits unlike Used Cooking Oil (UCO).

GTW in its typical form is not suitable for

bio-diesel producers, who require a minimum 95% FOG concentration. Transporting large volumes of water for small feedstock volume and high pre-treatment costs to dewater it, gives it very little economic value, and less incentive for GTW haulers to collect waste at affordable prices.

Clemes explains: “Eco Clarity has developed a patented process for harvesting FOG and solids, effectively dewatering the GTW and achieving the very saleable 95% FOG concentration whilst discharging water with typically a 30% Chemical Oxygen Demand (COD) reduction and less than 0.001% FOG content. The process is purely mechanical and uses no chemicals.”

“The conversion of GTW into a concentrated high value feed stock in great demand for biodiesel production and meeting Renewable Energy Directive targets in the UK and EU.

We can provide feedstock with International Sustainability and Carbon Certification (ISCC) while generating Renewable Energy Directive Credits for Bio-Diesel Producers, and Green Credentials for water utilities who enable the acceptance of GTW to their sites, and for the Grease Trap Waste Haulers who dispose of their GTW at these sites” he enthused.

GTW solution

“To address the problem of having fewer and fewer disposal locations that accept GTW, and with more countries banning acceptance at landfill, our model - that is gaining wide acceptance in the UK - involves establishing a network of convenient low cost GTW disposal sites that can be installed at any existing wastewater treatment works, or private permitted wastewater discharge sites. The pat-

ented technology has a small footprint, is low energy and low cost, and can handle large volumes continuously. Our ‘FOG Consolidation Hubs’ are modular, scalable and containerised.

“The Eco Clarity concept has been proven in long term tests at a trial and testing facility in Amsterdam with Argent Energy, Netherlands, a major bio-diesel producer in The Netherlands. Having validated our technology and successfully completed trials, we have now completed FAT of our latest 3rd generation plant in Jan/Feb 2022 with shipping and installation at Argent Energy, UK to go-live at a fully operational capacity in April 2022. Eco Clarity provides a unique low risk and high return opportunity for enabling GTW deliveries at existing wastewater treatment sites in the UK and Europe, in fact anywhere!” concluded Clemes.

Local manufacturing bonus

The sophisticated Eco Clarity containerised plant and components are locally manufactured by metal fabricator Fabrinox in Paarl. The company built the original test unit supplied to Argent Energy in The Netherlands and have in collaboration with Clemes and his team, refined the concept and manufacturing techniques, with plans, and work started on, shipping a further three plants to sites the UK where Fabrinox experts will assemble, test and commission the units before handover to Eco Clarity.

The fact that Fabrinox can successfully manufacture and export competitively to an international market, bears testimony to the firm’s 29 year reputation in manufacturing, project management and installation capabilities for both local and international clients.

65 motors supplied to wastewater plant expansion project

WATER purification specialist PCI Africa has expanded the treatment capacity of a wastewater plant south of Johannesburg, installing over 65 WEG motors for optimal performance, reliability and energy efficiency.

The project involved

the addition of an extra module to the existing wastewater treatment plant, allowing it to treat another 50 000 m³ of water each day. Ongoing urban migration and development in the area has demanded that the region’s wastewater treatment facilities

continue to increase their capacity.

According to Lebo Rathebe, proposals manager at PCI Africa, the mechanical portion of the contract included the inlet works, 25m diameter primary settling tanks (PSTs), a biological reactor, secondary set-

tling tanks and dewatering facilities.

“We added a sixth module to the plant, which included the installation of two screw pumps to feed the PSTs, with four front rake screens and hydro-conveyors,” says Rathebe. “The PSTs were fitted with 30m long half bridges and two recycle pumps per tank.”

The new module treats water using a three-stage process for the biological removal of nitrogen and phosphorus, he explains. Influent – the incoming stream to the plant – first enters an anaerobic reactor before reaching an anoxic reactor and finally an aerobic reactor.

“Recycle pumps transfer part of the stream from the anoxic reactor back to the anaerobic reactor, to preserve microbiological matter and keep the solution homogeneous,” he says. “There are also recycle pumps to move some of the stream back from the aerobic reactor to the anoxic reactor.”

The WEG W22 motors, supplied by Zest WEG, to this project mainly power the numerous pumps on the site as well as the mixers and agitators, says Dillon Govender, Zest WEG’s sector specialist for public sector business development.

The motors on this site range mainly from

30 kW to 90 kW flange-mounted units and also include pad foot-mounted motors from 1,5 kW to 37 kW.

“WEG motors are installed in all major processes, from screening, de-gritting, primary settling biological nutrient removal reactors, secondary settling and waste sludge thickening up to dewatering,” says Govender. “Our role in this project demonstrates our growing contribution within the wastewater sector in South Africa and the continent generally.”

In this project, WEG motors are also driving the pumps for return activated sludge and waste activated sludge. He highlights the demanding nature of wastewater applications, given the high levels of corrosion that can occur if equipment is not suitably designed and manufactured.

“The Class H insulation on these WEG motors enhances their durability and lifespan, allowing them to withstand a higher temperature rise,” he says. “The contract also specified the inclusion of anti-condensation heaters for all motors of 4 kW and above. Our motors on site also boast paint plan 212P as well as IP66 ingress protection to help keep them free of moisture or dust.”

With the rising cost of electricity, it was



A return activated sludge pump station with power provided by WEG motors.

vital for the motors to run at high efficiencies to control the plant’s operating costs. This WEG supplied its IE3 top premium efficiency motors to satisfy the client’s specifications and ensure the owner achieves the lowest cost of ownership. Govender notes that Zest WEG also offers IE4 motors, the next level of efficiency.

Rathebe emphasises the advantage of having Zest WEG supply almost all the motors on the project, saying this made life easier for both the contractor and the end-user.

“In terms of ongoing

operation, the plant owner can economise on the spares they carry, and be assured of responsive after-sales support,” he says. “As the contractor executing this project, it was easier for us to have one source of responsibility when dealing with the supplier.”

Govender concludes that the quality, robustness and efficiency of WEG motors allows Zest WEG to offer a five-year guarantee, giving customers not only value for money but peace of mind that operations will not be disrupted by unexpected stoppages.



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Advantages of automated firefighting systems with remote-controlled monitors

Written by Fritz Zimmermann, Head of Engineering Department, FireDos GmbH, Wölfersheim, Germany.
 Republished by Mike Feldon, Director, DoseTech Fire, South Africa.

FOR several years automated firefighting systems with remote-controlled monitors are used for fire protection of:

- Tank farms
- Petroleum loading terminals
- Aircraft hangars
- Thermal power plants
- Production facilities
- Recycling plants
- Waste incineration plants

To fully utilize the range of potential offered by remote-controlled monitors for firefighting, introducing a programmable (PLC) control system with state of the art communication facilities is mandatory. This allows the connection with automatic fire detection systems and fire alarm control panels for very large and complex facilities.

Features of control systems for automated fixed firefighting systems with monitors

The range of electric control systems for remote-controlled monitors varies from stand-alone control systems to control a single monitor through to complex systems



Monitor in a recycling plant.

with multiple monitors where decentralised individual controls are connected with a central control unit via a fibre-optic network. Dependant on the requirement, compact PLC systems or systems consisting of several interconnected assemblies make up the control system. Where high functional safety is required, redundant CPUs (Central Processing Units) can be installed or, alternatively, PLC control systems in accordance with the required safety level (SIL). A daily automatic self-test is one standard feature of today's con-

trol systems. During this process, the functionality of all drives and sensors fitted on the remote-controlled monitors is tested. If a fault is found at one of the components, a corresponding error message is sent to the supervising body. This ensures that possibly occurring failures are reported immediately and can be eliminated before a malfunction during operation happens. This significantly increases the reliability and availability of the automated firefighting system, compared with such systems which are tested for functionality

in more or less long and possibly irregular intervals. For easier commissioning, the automated control systems are fitted with an HMI (Human-Machine Interface) option. Thus, during commissioning or a change in program, all threshold values which must not be exceeded by the remote-controlled monitors can be adjusted in the control cabinet without having to make any settings directly at the remote-controlled monitors. In the case of very large systems, this is an invaluable gain of time during commissioning, service and use.

Outlook and conclusion

The technical development in the field of drive engineering, sensor technology and control technology offers some great future potential to detect fires in their initial phase as well as to fight fires in a localized and resource-conserving manner by use of monitors.

Fritz Zimmermann was hired by FireDos as head of the engineering department in 2012. He is in charge of foam-proportioner and fire-monitor design and development.

Previously he worked for Alco for over 28 years in the design and development of fire-monitors and project development for automated extinguishing systems and tank firefighting equipment.

DoseTech is the South African partner of FireDos GmbH.

For more information, visit www.dosetech.co.za, Email: support@dosetech.co.za, Tel: +27 (0) 86 111 1544

Conveyor chain bearings work well after two years



A drop-size carrot sorter.

A drop-size carrot sorter, with Vesconite plain bearings installed on its conveyor chains, has worked well at South Africa's largest carrot producer for two years.

"...A break in any one of the steel links means that the entire chain needs replacing."

The carrot producer installed the bearings on one of its two processing lines to test whether the processing line with Vesconite performed better than the standard processing line.

Since installation, the farm reports that

Vesconite bearings on its conveyor chains have reduced wear and resulted in quieter operation.

A drop-size sorter consists of a main-frame with sprockets on each side. A chain runs on the sprockets and a polyethylene plate is attached. Rollers, spaced increasingly further apart, are located on the polyethylene plate and carrots, depending on their size, fall through the differently-spaced rollers into bins below.

Ensuring the smooth operation of the sorting machine, including the bearings on its roller chains, is thus paramount.

Vesconite agricul-

tural application engineer Johan Cronje says: "Farmers are concerned about conveyor chain wear. A break in any one of the steel links means that the entire chain needs replacing."

Chain replacement can be extremely costly. Besides the cost of the chain, a chain breakage could result in a drop-size sorter being out of operation for a day, with resulting losses in production and processing time.

Quieter operation is also important for health and safety, since workers may be sorting and working near the traditionally-noisy machines, states Cronje.

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ALL INDUSTRIAL, MOBILE, SPRINKLER REQUIREMENTS

Booming international demand for SA preowned equipment

By David Poggiolini

THERE is a thriving international market for local preowned construction and mining equipment. This is considering the long lead times for new gear due to the significant impact that the Covid-19 pandemic has had on global supply chains. Mining contractors are having to wait up to between 12 months for certain brands, while many prominent suppliers of articulated-dump trucks have a full order book until mid-2023.

"We are currently supplying locally sourced construction and mining equipment to top mining destinations all over the world and to countries that are investing heavily into developing their infrastructure. There has been a notable spike in demand for quality preowned mining equipment over the past two years due to the ramifications of the lockdowns that were implemented to contain the spread of the virus. It is going to take time for supply chains to normalise again, and quality preowned equipment that is able to get the job done is significantly easier to obtain. This bodes well for us and the preowned-equipment market," Shane Naude, owner of EarthCon Equipment Sales, says.

However, Naude is watching international developments closely considering the current geopolitical climate. However, this volatility could also fuel preowned equipment sales as businesses take a more cautionary approach to procurement of capital equipment.

EarthCon Equipment Sales sources



preowned equipment nationally with about 75% of these machines destined for other countries. The company specialises in sourcing premium preowned equipment brands, namely Caterpillar, Bell Equipment, Hitachi Construction Machinery and Komatsu. This is in addition to a full range of preowned Wirtgen road-construction equipment, which remains the company's key focus, considering Naude's previous 15 years' experience working in the field. These machines all have a good resale value.

The local market for preowned equipment remains flat, largely due to a notable decline in civil-engineering infrastructure spending by government. In fact, the company has sourced many of its machines from large civil-engineering contractors that have gone into business rescue due to the state of the local construction market. For example, the company sold 50% of an ailing large contracting company's machines while it was in

an 18-month-long business rescue process, providing significantly better deals than what was possible through an auction house. EarthCon Equipment Sales valued some of these machines at much higher values than what an auction house was willing to offer.

Local mining and civil-engineering contractors that buy preowned equipment are looking for a more affordable solution than imported machines. This is considering the current rand/dollar exchange rate. Preowned equipment can sometimes be up to 50% more cost-effective than new imported equipment.

Clients have also found that purchasing used equipment for a project can be more financially beneficial than renting because the machines can be resold after the contract has been completed.

Considering the state of the local civil-engineering market, more contractors are sweating their assets, pushing operating hours of their fleets to 20 000 and sometimes even 30 000

operating hours. This is opposed to overhauling their fleet at 10 000 operating hours, making it difficult to find a low hour plant that is still in a sound working condition.

EarthCon Equipment Sales currently has about 60 different items of plant on its book. These machines have undergone a rigorous inspection process including by original equipment manufacturers to ensure that they are in a sound operating condition. A report on the condition of the machine will include, among other information, ID and ECM serial numbers; operating hours; and the status of the electronic, drivetrain and braking system. This is in addition to an assessment of the condition of the body and tyres, as well as oil and coolant levels.

"The best find are those machines that have 10 000 operating hours and have had adequate work done to them, including to the engine and undercarriage. This is opposed to machines with the same operating hours

but have not been adequately serviced and repaired. On the other hand, we have also found machines that have clocked 30 000 operating hours that are still in sound working condition because they have been serviced and maintained," Naude says.

Considering the demand for preowned equipment, he cautions potential buyers to be on the alert for unscrupulous suppliers.

Enterprising companies will always ensure that they are dealing with a supplier that has a strong track record in the market. "This includes a team of representatives who have extensive skills and experience working in the construction and mining equipment industry. They also need to be "hands-on", overseeing the loading of the equipment at the clients' site. This is in addition to the washing of the equipment according to international import specifications and loading of the machines onto the ships at Durban harbour, KwaZulu-Natal," Naude concludes.

Industry back face-to-face at this year's Propak Africa

THE Propak Africa exhibition, which took place from 8-11 March at Johannesburg's Expo Centre in Nasrec, offered four days of face to face access to the latest cutting-edge machinery, products, consumables, systems and services.

Over 200 exhibitors attracted over 9 750 visitors, keen to update themselves of the latest trends and developments across the packaging, printing, plastics, food processing and labelling industries. The show attracted over 360 international visitors, many of whom were from African countries.

Said Mark Anderson, portfolio director at Specialised Exhibitions, organisers of the show: "Propak Africa, together with co-locates The GAPP Print Expo, Pro-Plas Expo, Food-Pro Expo and Pro-Label Expo, delivered an excellent four days of exhibitors showcasing latest products, technology and innovation. Thousands of visitors attended the show and met with exhibitors across the two exhibition halls. The general feeling of exhibitors was that although the quantity of visitors wasn't quite as high as it was before Covid, it was more than compensated by the quality of visitor."

Exhibitors also expressed their satisfaction with the business to business event. Sherwin David, Marketing Manager at Future Packaging says that it was "refreshing to engage with customers again, face-to-face," and that "Propak Africa is a value-add to our business, and a big part of our marketing strat-

egy. It positions us strategically to engage with different industries."

Nishara Naidoo, Head of Operations at Inpakt SA was a first-time sponsor of Propak Africa, and says that it was "worth what we paid a million times over in the visitors and queries we have received. The show is smaller but the quality of the visitors - and leads - has more than made up for that. It is our target market perfectly. It's been a phenomenal show."

"After two years hiatus it is great to be back and good to be able to engage not only with customers face-to-face, but also with the industry at large" says Marc Black, Managing Director at Morgancoat. "This is the beauty of a platform such as Propak Africa that brings together industry and customers."

Richard Rügheimer, General Manager at Syntegon Technology SA felt that "while the show is smaller, we are very impressed by the level of innovation on the floor," and says that they "sold a brand-new Bosch Packaging machine from the stand and Propak Africa has been the perfect platform to get our new brand out there."

Eptech has been at Propak Africa since 1979 and Director John Binedell says they are "very happy to be back. It has been a good show with quality visitors, and interest from Cameroon and Zimbabwe that looks promising."

Daily free-to-attend seminars with subject experts delivering industry-related presentations added further value to the visitor experience. These were live-streamed to enable those who could not attend the show in-person to also benefit from the seminar content.

"Propak Cape will be taking place at the Cape Town International Convention Centre from 24 to 26 October 2023, and a lot of the exhibitors that have been at Propak Africa will be exhibiting in Cape Town," says Anderson. "Then Propak Africa 2025 will be running from 11 to 14 March 2025 at the Johannesburg Expo Centre. We are looking forward to another two excellent shows."

More details are available at www.propakcape.co.za and www.propakafrika.co.za



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CHANGE OF OWNERSHIP

Reynolds Hire has been a leading supplier of industrial and construction power-tools, plant and equipment for the past 34 years. The founding owner, Seumas Reynolds, is a prominent and highly regarded figure in the industry (past Chairman of the Equipment Rental Association), has decided to embark on a well-deserved retirement.

The new owners of Reynolds Hire & Sales are Gary Neubert who is very well versed in the industry, being a past CEO of the EIE Group, and Harry Todd, past Financial Director of Novus Holdings. They are fully committed to continuing the service excellence that the clients of Reynolds Hire have enjoyed in the past and with their knowledge and experience are confident that the Reynolds Hire legacy will continue to grow.

While Reynolds Hire has a comprehensive range of world renown branded equipment for hire and sale the intention

is to even further expand the service/product offering to meet the clients needs. There is also a full range of consumables available to ensure a 'one stop shop'. To further enhance the client convenience/experience



Gary Neubert, Harry Todd, Frank Bold, George New, Seumas Reynolds.

Reynolds Hire is teaming up with Brights hardware, to have representation in their branches. Reynolds Hire and sales also offers a full workshop/repairs facility.

The transaction was concluded on 1 March 2022 and facilitated by **Horizon Capital Corporate Finance**, a company that specialises in the sale and acquisition of medium sized enterprises across all industry sectors.

This involves the process of preparing a business for sale to maximise its value; conducting a business valuation; preparation of a Sale Prospectus; identifying and approaching qualified prospective buyers; identifying the optimum deal structure and negotiating a 'fair' price. It also oversees the Sale Agreement and all supporting documents as well as facilitating the payment. All transaction discussions are governed by confidentiality agreements to protect the interests of all parties.

Should you be considering the sale of your business, or seeking acquisitions, please contact our Corporate Finance team on **021 425 8586** for a confidential chat.

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THE BEE IN MY BONNET COLUMN

Dumb and dumber

IF we are to believe environmental columnist, George Monbiot's latest missive *Gastastrophe*, published in the UK's Guardian newspaper 9th March 2022 (and why wouldn't we?), some 'astonishingly foolish decisions' have allowed Vladimir Putin to control much of Europe's energy supplies and all that goes with it.

I'll let George Monbiot's piece provide the enlightenment in this abridged version.

AS Russia threatens to cut off the fossil gas on which much of Europe depends, the continent's storage facilities are a crucial line of defence. So you'll be glad to hear that Germany possesses a massive gas storage reservoir, under the town of Rehden, in Lower Saxony. The biggest strategic reserve in Western Europe, it can hold

enough fossil gas to supply 2 million households for a year.

You'll be less delighted to discover who owns it. It belongs to a company called Astora. Astora is a subsidiary of the Russian state company Gazprom. Altogether, it owns about one-quarter of Germany's gas stores. All of them are almost empty. They have been run down to 10% or less of their capacity. According to the German minister for economic affairs and climate action, these storage facilities have been "systematically emptied".

Idiocy is nested within idiocy like a stack of Russian dolls. Germany has allowed private companies to control its strategic reserve, and has imposed no legal requirements on how much gas the reserve should hold. Nor has it prevented companies

controlled by foreign states from owning it. Instead, like the UK, it has ceded this crucial security issue to a mysterious deity it calls "the market".

With the Nord Stream 1 pipeline, Germany hooked itself to Russian gas, even as analysts warned that this might become a major strategic liability. Their warnings have been vindicated: this is the pipeline Russia is now threatening to shut in retaliation for sanctions. As if to reinforce its dependency, in 2005 Germany commissioned a second pipeline, Nord Stream 2. The approval was rushed through by Chancellor Gerhard Schröder, just before he left office. Within weeks, he was appointed to run the Nord Stream AG shareholder committee, overseeing the pipeline's construction. He later joined

the boards of several Gazprom companies, and became chair of Rosneft, the Russian state oil company.

Why does Germany need Russian gas so badly? Partly because in 2011, after the Fukushima disaster, the federal government decided to shut down all its nuclear plants, owing to the risk of tsunamis in Bavaria (Ed! More likely from pressure from the Green Party.)

The nuclear shutdown is to Germany what Brexit is to the UK: a needless act of self-harm, driven by misinformation and the irrational allocation of blame.

Within two months of this ruling, Gazprom and the German company RWE signed a memorandum of understanding. It stated that "in light of recent decisions by the German government to reduce their nuclear

power programmes, we see good prospects for the construction of new modern gas-fired power plants in Germany". In 2019, Angela Merkel explained to the World Economic Forum: "We will have phased out nuclear energy by 2022. We have a very difficult problem ... we cannot do without baseload energy. Natural gas will therefore play a greater role for another few decades ... it's perfectly clear that we'll continue to obtain natural gas from Russia." Germany now relies on Russia for 49% of its gas supply.

Technically and politically, it seems to be too late to reverse this crazy decision, which replaced a low-carbon source of electricity with a high-carbon source. As a result of these stacked idiocies, Russia doesn't have to wage war on Germany

to inflict deadly harm. It needs only to cut off the gas.

A similar dependency afflicts much of Europe, which collectively receives 41% of its gas imports and 27% of its oil imports from Russia, as well as almost half its imported coal. While the UK government has promised to phase out Russian oil by the end of 2022, this year alone the UK is likely to fund his war machine to the tune of £2bn in payments for liquefied gas.

Gas and oil, and the banks that finance them, are among the Russian businesses that have not been sanctioned by the EU, the UK and the US, though they represent, by a long way, Russia's most important source of foreign exchange. Why not? Because we have reduced ourselves to craven dependency on that despotic gov-

ernment, through a dismal failure to wean ourselves off fossil fuels. While we sternly condemn Vladimir Putin, we quietly slip him the money required to sustain his atrocities in Ukraine. Like a ruthless pusher, he exploits our addiction.

The measures needed to forestall environmental catastrophe are the same as those required to release ourselves from dependency on the autocratic governments and ecocidal corporations that control the world's fossil fuels. Starving the Russian military machine of funds, preventing the collapse of life on Earth: we can do both at once. So what are we waiting for?

Eish.

The full article can be read on www.monbiot.com

Scalper meets recycling contractor's expectations



A year after taking delivery of its first ever McCloskey machine from Kemach Equipment, Crush-It Green (CIG) reports that the R155 scalper, deployed at one of its crushing sites in Gauteng, has lived up to expectations.

Founded in 2019 when the two partners took over an existing recycling and production facility that had been in operation since 2016, CIG is one of the few South African companies that holds a Global GreenTag Certification, one of the world's most trusted and widely recognised ecolabels.

Although CIG is still active in its founding concrete and rubble recycling business, the company has in recent years expanded into crushing and screening of virgin material, working on several sites in Gauteng, including Nigel, Soweto and Germiston. The scope of projects entails screening of gold-bearing dumps for a client and then crush the rock to produce aggregates for the construction industry.

On the back of an expanding project portfolio, CIG went into the market for a new scalper early last year to bolster its fleet.

Having traditionally been devoted to a certain premium brand, for several reasons CIG decided to go the McCloskey route and took delivery of its first ever McCloskey R155 scalper in March 2021.

"We have always run a certain brand, but our usual supplier didn't have stock at the time, and we wanted a scalper quite urgently. We were not keen on a second-hand unit and could also not accommodate the Covid-19 influenced long lead time," says Clint Rodwell, partner at CIG.

Rodwell says the existing relationship

with Bradley Karolus, sales specialist at Kemach Equipment, whom Rodwell had previously dealt with for years before he recently joined Kemach, was one of the key factors in CIG's purchasing decision.

"Bradley assured us that the McCloskey R155 scalper was equally good, and this has turned out to be true. With his assurances, we decided to take a chance and bought the McCloskey scalper," says Rodwell. "A year after running the machine, we are happy with the performance and the support from Kemach."

A key factor in CIG's buying decision was the versatility of the machine. By its very nature, says Rodwell, the McCloskey R155 can be used as a scalper or a final screen. Central to the versatility of the machine is also the feeding arrangement, which offers customers the choice of either an apron or belt feeder.

"McCloskey offers both options – apron and belt feeder – to suit different customer needs. This is based on our understanding that customers require different feeder arrangements for different applications," says Karolus.

Further machine versatility is achieved through the interchangeable top deck of the machine. "The machine's top deck can be configured with a grizzly, mesh or punch plate. McCloskey is one of the few OEMS offering such a range of options," says Rodwell.

Another crucial factor in CIG's decision was the fact that McCloskey runs common components, such as engines and hydraulics. "McCloskey runs a Cat engine, which is a common motor in the market and the parts are easily accessible from different suppliers," concludes Rodwell.

Precise and convenient - radar level sensor with IO-Link

Trouble-free monitoring of large tanks



- 80 GHz frequency enables level measurement with millimetre precision of up to 10 m
- Non-contact measuring principle: no malfunctions due to deposits or wear
- Certified for use in hygienic areas
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- Remote sensor parameter setting and level monitoring via connection to the IT system

The non-contact radar measuring principle prevents malfunctions or failures of the sensor caused by the adhesion of viscous media or damage from agitators. The 80 GHz frequency used ensures stable and precise measurement results even in the presence of steam or condensate in the tank. The sensor is designed for use in hygienic areas, so that even CIP and SIP processes or the use of spray balls do not impair its proper functioning.

WITH the LW2720 level sensor, levels of liquid media in tanks with a height of up to 10 metres can be monitored precisely and without blind

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Renergen chooses DAF to drive LNG revolution



Mark Gavin (Sales Director – Transport Solutions), Alec Jackson (Sales Executive – Transport Solutions), Marius Barnard (Managing Director – Transport Solutions), Nick Mitchell (Renergen Executive Director, Chief Operating Officer), Craig Schneiderman (Renergen Commercial and Project Controls Manager).

AHEAD of commissioning of the first phase of its Virginia Gas Project, Renergen Limited's subsidiary, Tetra4, the holder of South Africa's first and only onshore natural gas and helium production right, has taken delivery of four DAF CF 430 trucks from Babcock, to be used to haul ISO refrigerated containers of LNG in a 'road pipeline' to Renergen customers.

Having commenced construction in 2019, the Free State-based project – sitting on a massive production right that spans 187 000 hectares across the towns of Virginia, Welkom and Theunissen – is expected to produce its first liquefied natural gas (LNG) and helium in May this year. The roughly R1-billion project will produce 50 tons of LNG and 350 kg of helium per day at name plate capacity.

"We are excited about the imminent commissioning of phase 1 of our Virginia Gas Project – South Africa's first commercial LNG facility," explains Nick Mitchell, chief operations officer at Renergen. "With this project, South Africa becomes one of the only seven remaining producers of helium in the world, alongside the United States, Canada, Qatar, Russia, Poland and Algeria."

The first phase of the project goes live with two main customers – Consol Glass and Ceramic Industries. The two companies will consume about 60% of the LNG from phase 1, with the remaining 40% destined for the trucking market as part of Renergen's strategy to drive the dual fuel concept in the local

logistics industry due to start later this year.

In fact, Renergen's own four DAF trucks will be retrofitted with a dual fuel kit, which has been proven to achieve a substitution rate of between 35% and 50% on average, depending on the route and weight of the cargo.

"Key to our buying decision was DAF South Africa's willingness to collaborate with us on the LNG dual fuel project, which we believe is the local transport industry's immediate bridge to the net carbon reduction and into a renewable future" says Mitchell.

"We have 24 dual fuel trucks in the market. With this solution, one of our clients in Pretoria is saving between R1 and R1,20 per kilometre..."

Due to the documented financial and environmental benefits, Mitchell believes dual fuel sets the logistics industry on the path to a sustainable future. He, however, says that there is no silver bullet on the road to sustainability, stressing that all alternatives, including natural gas, electric vehicles and hydrogen, among others, will all have a role to play and must co-exist.

"As the industry turns to alternative fuels to remain competitive and meet its environmental obligations, we see dual fuel as the immediate solution. DAF South Africa shares the same vision, and this has been demonstrated by its willingness to walk with us on this journey towards decarbonisa-

tion of the trucking industry," he said.

Mark Gavin, sales director for Babcock's Transport Solutions business, says given that up to 50% of a long haulage transporter's running costs are attributable to diesel, dual fuel offers a feasible alternative, especially considering the abundance of natural gas in the local market.

"We have 24 dual fuel trucks in the market. With this solution, one of our clients in Pretoria is saving between R1 and R1,20 per kilometre, which translates to between R10 000 and R14 000 per truck per month. Every time the diesel price goes up, they save more," explains Alec Jackson, senior sales executive at Babcock Transport Solutions.

Looking ahead, Mitchell believes that LNG prospects in South Africa represent an exciting future for the local logistics sector. At the recent 4th annual South African Investment Conference, Renergen committed a further R15-billion for the development of its phase 2 of the Virginia Gas Project. The second phase will produce between 500 t and 600 t of LNG per day, almost 10 to 12 times the size of phase 1. This will be complemented by about 5 t of helium per day.

"We are sitting on one of the most exciting and strategic natural gas discoveries in the country. We have spent the past nine years proving the resource and building a business model to support it. We are glad to announce that we have a proven resource totalling as much as 400-billion cubic feet of LNG (over 11-trillion diesel litre equivalent)," says Mitchell.

The real pain of following statutory process

Deon van Zyl
Chairperson, Western
Cape Property
Development Forum

FRONT of mind this month is the "hot-off-the-bench" interdict of a multi-billion rand project in the Western Cape.

The Western Cape Property Development Forum has a strict policy of not speaking about individual developments. What we speak out about, as our members know, are the policy and procedural issues that impact our industry by delaying projects; the ones that cost households their income – whether those be in wages, salaries, or fees – and result in the loss of investment confidence into the Western Cape.

So, let me deal with the current industry frustrations around the statutory process that is causing these delays to happen, yet again.

Large-scale, intricate projects typically trigger every rule in the legislated rulebook; water use licenses, environmental management applications, heritage applications, land use applications and building application processes. Every one of these legislated application processes is underpinned by reams

of expert reports, each dealing with a very specific field of specialisation. And each application is also assessed by different spheres of Government.

Every single legislated process also requires multiple public-participation opportunities and in turn offer some form of appeal process. Society has a plethora of chances during which to raise objections, at no cost to the individual objector or appellant, and every one of the decisions that arise can be taken on legal review.

That is the nature of our Constitutional Democracy – enabling the right of the very last naysayer to be heard; even to the level of public-participation fatigue. There are so many checks and balances in place that it can truly be considered a miracle if a project ever gets to break ground in South Africa, never mind being completed on time and on budget.

But, at some point, someone mandated by specific legislation needs to reflect on the total picture and make an informed multi-disciplinary decision either for – or against – the project. In fact, this decision making happens in each silo of

legislation. The shocking reality is that any single "no" effectively vetoes the project – large or small, private or public sector projects.

The vexing question that is front of mind to any large-scale investor, whether private or public, is what certainty can there ever be on the outcome of the statutory application process in South Africa when any single person has a veto right along every step of the timeline? And even when due process has been followed to the letter and decisions are made, will there then still be side-line attacks that stop investment in its tracks?

During times of economic crisis and dire need for job creation, one would expect the pendulum to swing accordingly.

One would expect that, following due process, a level of sensitivity would exist for the wages paid on construction sites, and the spin-off benefits to society at large. One would expect the multitude of statutory silos to work together to promote and facilitate investment. And, sometimes, this does happen. But, alas, the right to veto or delay via the Court appears to supersede any

national crisis.

But returning to the ruling at the centre of this discussion: what do the 4 000 wage-earning parents do (some of whom are the only breadwinner in an entire extended household) when the large-scale project they are working on is halted along with their fortnightly wages? What do we say to them when they suddenly cannot put food on their tables because the right to veto is more important than their right to feed their families?

It is indeed a strange country we live in – we demand of our elected leaders that they be strong and make good structural decisions. But when they do, and we don't like the decision, we run to the courts which have become the real, de-facto government in South Africa. What is the survival and growth message that South Africa sends out through all this to the investment world?

If we are serious about investment and job creation, we will have to recalibrate the way we make decisions about just where the buck finally stops... and judge as carefully the right of individuals to veto our country even further down the economic rabbit hole.

A pre-plant, pre-emergence treatment herbicide that effectively controls resistant wheat crop weeds



CORTEVA Agriscience has brought its latest crop protection solution, Aubaine® 518 SC herbicide, to South African wheat farmers. Aubaine® 518 SC provides pre-plant, pre-emergence, or early post-emergence control of wheat crop weeds, particularly in regions that experience widespread winter rainfall. The product contains a unique and successful

combination in the fight against ryegrass and certain types of broadleaf weeds.

"One of the biggest frustrations for cereal farmers is Lolium spp (ryegrass) that is resistant to herbicides, the good news is, this not the case with Aubaine® 518 SC. Not only is the solution a powerful deterrent, but it also plays a significant role in effective herbicide resistance management," says Henry Hoek, Category

Marketing Leader, Corteva Agriscience. "With Aubaine® 518 SC, wheat producers can mitigate the risk that weeds such as clover and musk herons pose, helping to increase yields and enhance profitability. We are proud to be able to cater to local needs with this launch, providing hands-on and trustworthy expertise as well as industry-leading and innovative products to market, all while walking the jour-

ney together with our farmers."

Corteva molecules and formulations feature properties such as low effective use rates coupled with favourable environmental impact. In 2020, Corteva Agriscience also launched two new post emergence wheat herbicides, Quelex™ 200 WG and Tarzec™ 320 WG, that will help wheat farmers in South Africa effectively manage broadleaf weeds and grasses.

100 years of engineering excellence



Paul Olivier.

JG Afrika, a proudly South African consulting engineering firm is this year, celebrating 100 years of engineering and environmental excellence. This significant milestone bears testament to the skills, experience, dedication, and passion of a strong team of people who are committed to JG Afrika's core values of 'Experience', 'Quality' and 'Integrity'.

The company was founded in Johannesburg in 1922 and was formally known as Jeffares & Green and has since grown into a leading multi-disciplinary engineering and environmental consultancy operating locally and internationally.

"I am exceptionally proud of this accomplishment as it demonstrates the sustainability of our business. There are only a few South African companies and now only two local engineering firms to have reached

this milestone. Over the years, we have survived a world war, many far-reaching changes in government and its ideologies and, more recently, a pandemic that has wreaked havoc on the global economy. We have always been quick to adapt to change and emerge stronger than before," Paul Olivier, Managing Director of JG Afrika, says.

The company's proud legacy was started by John L.S. Jeffares when he established *JLS Jeffares Consulting Practice* in Johannesburg. Jeffares was shortly awarded an OBE to pioneer a railway route from Victoria Falls to Walvis Bay. Five years later he was joined by Harold (Hal) H. Green and together they undertook work throughout sub-Saharan Africa, including the hydrological study and access roads for Kariba Dam. In 1947, they formed a partner-

ship, and the name Jeffares & Green was used for the first time.

Throughout the years the firm continued to progress and evolve and in 2016 Jeffares & Green rebranded to JG Afrika to better reflect its African roots and commitment to uplifting the continent. The firm has continued to build on the reputation for quality engineering services that was established many years ago.

Apart from the main operating company focusing on the provision of consulting services in all fields of civil and structural engineering, the firm has since grown its professional service offering to now include as many as 23 different disciplines and fields of expertise. These are in high demand and the company's extensive skills and experiences are being deployed in large infrastructure through to smaller community-based projects.

Olivier remains proud of all of JG Afrika's projects, especially those that are improving the lives of the most vulnerable. "Our community-based projects are designed to have a significant positive socio-economic impact right from the early implementation phases. This is by providing ample opportunity for the training and development of members of poor communities located within the project footprint. It helps to create jobs in areas where there is high unemployment, while also ensuring the long-term sustainability of infrastructure because

communities' members have been adequately trained in monitoring and maintenance. Extensive public participation and stakeholder engagement processes also ensure project buy-in and unite different factions so that we can all work together efficiently towards achieving a common goal," he says.

Olivier is convinced that he has the best team to help him drive this heightened focus on innovation. An environment has been created that encourages people to be innovative and find unique solutions to challenges. The company has preserved its strong family values and culture over the years. For most employees, JG Afrika is a "home away from home" and they have remained loyal to the firm for many years. This culture and working environment also attract the best young talent to the company to ensure continuity.

Certainly, this milestone would also not have been possible without the ongoing support that the company continues to receive from its clients. Many have nurtured a longstanding professional relationship with JG Afrika.

"JG Afrika is only 100 years young, so there is still a lot of potential to learn and grow to ensure that we remain the best at what we do. We are looking forward to many more years of providing leading technical services, as well as innovative and sustainable solutions to our growing client base," he concludes.

Dates announced for WCPDF conference

DELEGATE registration is open for the WCPDF's (Western Cape Property Development Forum's) 9th Annual Conference, staged on Thursday 26 & Friday 27 May at the Cape Town International Convention Centre.

Under the theme "From Surviving to Thriving in the Built Environment", the two-day event has secured a number of prominent speakers, and our packed programme reflects not only the aspirations of the Western Cape industry, but the province's desire to become South Africa's prime

investment destination.

Focusing on the importance of public/private partnerships, and recovery post-pandemic, guest speakers include a keynote opening on Day 1 by Dr Intiaz Sooliman (Founder, Gift of the Givers) and on Day 2 by futurist Dion Chang (Flux Trends) on how successful players in commercial, residential, retail and industrial property have survived the past two years and are gearing up for the future.

The programme also includes challenging perspectives on infrastructure procure-

ment, the role and rise of micro-development in delivering affordable housing, and the importance of long-term planning by municipalities. A highlight on Day 1 will be a session facilitated by Premier Alan Winde as he interrogates six of the larger Western Cape municipalities on their future strategies to attract investment. We are also pleased to announce that the Executive Mayor of Cape Town, Geordin Hill-Lewis, will be addressing delegates and then hosting the networking cocktail event at the end of Day 1.

This is also the first time that exhibitors will be included. To exhibit at the conference (or to consider sponsoring one of the conference's products or events), please visit: <https://sbs.co.za/wp-content/uploads/2022/03/WCPDF-2022-Call-for-Exhibitors-and-Sponsors.pdf>

There are attractive early bird discounts for registrations received prior to 29 April, particularly for those who are already WCPDF members.

To find out more about the conference, please visit: <https://sbs.co.za/wcpdf2022/>

Ctrack Transport and Freight Index confirms local transport growth



Image credit: Hellman Worldwide Logistics

THE month of February saw the Ctrack Transport and Freight Index record strong growth of 7,1% compared to the corresponding period last year. Despite this year on year growth, there are several indications that this growth will slow down in the short term.

Growth has continued despite the return of COVID-19 and lockdowns in certain locations such as China, as well as continued supply chain disruptions, and then, of course, the ongoing conflict in Ukraine. Fortunately, the global supply chain has mostly untangled itself since November 2021, and this has assisted local growth across the sectors in the last two months.

The Storage sector has reported massive declines, which could be attributed to supply chain not being able to replenish items like microchips, motor vehicles, and other complex products from across the globe. The increase and expected additional increases in short-term interest rates, which in turn makes storage and high inventory levels costly have also influenced the rapid decline.

Interestingly, statistics indicate that the biggest growth has been in local road transport, which may include transport by trucks, but also by bakkies, vans and even motorcycles.

According to StatsSA, the fastest growing sub-sector has been land transport of electric goods and transport equipment, followed by textiles and clothing. Both these relatively small categories increased by over 25% compared to a year ago.

The other freight category, as StatsSA labels it, includes a mix of goods, and grew by 22,7%, while container transport grew by 20,4% and parcels by 7% compared to the same period last year.

declined, the overall Ctrack Transport and Freight Index returned significant increases. This can be attributed to Road Freight, the biggest sub-sector and contributing approximately half of the Index, returning excellent growth.

Due to the ongoing collapse of certain rail corridors due to theft, Road Freight has gained market share, but that alone cannot be held responsible for the increase of over 16% in Road Freight.

To be exact, Road Freight increased by 16,8%, with long-distance transport increasing by between 10% and 14% depending on the specific route. However, the strength of the road logistics index seems to be in the growth of local transport operations as opposed to international operations.

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Local transport, which includes transport directly to consumers or between local businesses, grew by more than 20%. This was a major factor in the overall Road Freight growth of 16%. Taking into account both the growth in value via StatsSA as well as the number of vehicles crossing certain landmarks on the road network, one can identify a number of trends.

Everyday shopping is being transformed and consequently so is the transport sector. Smaller vehicles and warehousing located in closer proximity to the major delivery areas will be integral to this revolution.

We could also see a transformation of the restaurant industry with them no longer offering a walk-in option or in-store dining facilities. The reality is that this sector continues to grow rapidly and probably grew by between 20 and 22% over the last year.

Air Freight has increased by 8,1% during the last year, and much of this growth can also be attributed to the demand from consumers for deliveries. This includes goods ordered from international retailers as well as local cell phone deliveries, with cell phones currently South Africa's biggest consumer import item.

The latest revolutionary transport trend focuses on more consumer-orientated products, but Rail Freight continues to play a major role in the agriculture, container and non-metallic product sectors.

WorldSkills Africa - Festo to host the 2022 competitions



WORLDSKILLS is a global competition organisation that raises the profile of skilled individuals worldwide. This organisation also demonstrates how skills are essential in achieving economic growth. Their competitions are a leading platform for international benchmarking in education. Festo, a leading supplier of Industrial Automation and technical education, has been a global industry partner of WorldSkills for over 30 years. They have been providing the competition organisation with state-of-the-art learning systems. The collaboration started in 1991 with a request for Festo to design and equip a new competition discipline titled Mechatronics. It has since expanded to many other disciplines, including Industrial Mechanics, Water Technology, Industrial Control, Renewable Energy, Industry 4.0.

Platinum sponsor virtual signing ceremony

Each year Festo enthusiastically supports this competition globally and locally: as an employer, training company, equipment provider and promoter of the dual apprenticeship system for vocational training. These two organisations recently had a virtual signing ceremony to officially declare Festo as a platinum sponsor

for WorldSkills Africa. The prestigious ceremony was attended by San-Quei Lin, one of WorldSkills International's Board Members, Muvatera Ndjoze-Siririka, the Acting CEO of the Namibia Training Authority and Brett Wallace, the Managing Director of Festo South Africa. Speaking in unison, all parties agreed that the upcoming competitions will help the world drive economic and social sustainability through skills.

Festo state-of-the-art equipment for WorldSkills 2022

The biannual WorldSkills International championships attracts over 1 600 of the world's best young industry professionals. Before the global competition, national and regional contests are held to select the individuals that will be competing at the international level. Festo supports these competitions with equipment and skills. After the national competitions, 12 African countries will be selected to compete at WorldSkills Africa 2022 in Swakopmund 28 March-2 April. These countries are Ethiopia, Ghana, Kenya, DRC, Madagascar, Mauritius, Morocco, Namibia, Rwanda, South Africa, Tanzania, Zambia.

After the regional competitions, the goal is WorldSkills Inter-

national in Shanghai, where the 46th competition will be held in October 2022 to celebrate the world champions.

Mechatronics

This multi-disciplinary skill is key to mastering the technologies of factory automation, troubleshooting and improving productivity. A typical example of mechatronics is the maintenance and programming of industrial robots in the automotive sector. Competitors use the Modular Production System for mechatronics from Festo to showcase their abilities in this category. It brings factory technology into classroom-sized learning systems, with real industrial components in software and hardware. Thus ensuring the step from the classroom to the factory floor is quick.

Water Technology

The impact of water scarcity on the environment and livelihoods is a growing concern worldwide. At the same time, technology is advancing rapidly in water and wastewater treatment plants. Thus, skills development and well-trained technologists are in global need. For this reason, Festo Didactic and WorldSkills introduced the Water Technology discipline in 2015. The discipline continues to

grow and gain popularity worldwide.

Competitors use the Environmental Discovery System (EDS) for water management from Festo. It is a modular learning system that allows hands-on learning of the core processes in water and wastewater treatment plants with practical exercises and experiments that enable the precise as well as detailed analysis of individual processes in the water cycle.

Industry 4.0

The fourth industrial revolution is evident in the digitalisation of the workplace. It offers numerous new channels of information and communication, with topics such as remote diagnostics, digital twin, industrial internet-of-things and more. To assist the workforce in mastering these new skills and create the benchmarking needed to establish global education standards, Festo has introduced Industry 4.0 on the list of competition disciplines that they will be equipping with their state-of-the-art learning systems this year. Participants will use the Cyber-Physical Learning System known as the CP-Lab, including PLC, HMI programming and managing a Manufacturing Execution System, within a small smart factory.

The partnership between WorldSkills and Festo helps address the growing skills shortages in technical disciplines across Africa. It further develops modern, industry-relevant curricula for vocational colleges and universities that are key to employability. We look forward to seeing the top competitors in action at WorldSkills Africa Swakopmund 2022!

For more info contact marketing on 08600 FESTO (33786) or email marketing.za@festo.com.

Infrastructure investment key to building Agri sector

Agri SA implores Government to redress the nations collapsing infrastructure.



THE GDP result for the fourth quarter of 2021, which were announced by Stats SA early in March 2022, clearly demonstrate the immense contribution that the agricultural sector makes to the South African economy, as well as its potential to provide even greater opportunities for job creation and earning of foreign exchange through agricultural exports.

Yet the sector's growth continues to be hindered by declining infrastructure, amongst many other challenges.

In its GDP report, Stats SA announced a 1,2% growth in GDP in the fourth quarter of 2021. The report identified agriculture as one of the key drivers of growth. The agricultural sector was the best-performing

economic sector, contributing 12,2% to the country's total economic activity.

Despite these good results, Stats SA noted that the economy has yet to recover to the levels of the second quarter of 2021, before the civil unrest in July 2021 and the stricter lockdown measures of the third quarter.

The sector's performance belies the challenges that threaten to derail its continued success. The most important of these challenges is the state of South Africa's critical infrastructure, especially roads, freight and our failing ports. This is a critical challenge South Africa must address in order to consolidate the gains of the past quarter and accelerate South Africa's economic recovery.

Now more than ever, government must play its part in aiding the economy's recovery by prioritising investment in the repair and maintenance of the country's critical infrastructure.

As it stands, the sector's performance in the current quarter is already under threat. In addition to the sector's vulnerability to variables including weather and global market trends, the current crisis in Ukraine will undoubtedly have negative consequences. Input costs like petrol have risen significantly, and other input costs like fertiliser, of which Ukraine is an important exporter, are also expected to rise.

While conflict in Europe is beyond government's control, national infrastructure is not.

Curro show profit in learning

CURRO Holdings has released its results for the year ending 31 December 2021.

"At 18 February 2022, Curro had 70 408 new learners enrolled for the 2022 academic year, which is an increase of 6% on a like-for-like basis from 2021," said Andries Greyling, Chief Executive Officer of Curro Holdings. "This excludes the acquisition of Heron-Bridge College with an additional 1 169 learners. We are encouraged by the level of new enrolments for the 2022 academic year, which has commenced with much enthusiasm," he added.

Increase of 49.2% in cash generated from operations

For the year under review, Curro generated R767 million of cash from its operating activities, 49.2% higher than the previous year.

Revenue increased by 14.5% from R3 094 million in 2020 to R3 543 million in 2021.

The schools' EBITDA (earnings before interest, taxation, depreciation, amortisation, and head office expenditure) increased by 14.3% to R1 013 million (R886 million in 2020), while EBITDA (after head office expenditure) increased by 15% to R789 million (R686 million in 2020).

Curro's headline earnings recovered to R245 million, 43.3% higher than the 2020 financial year. The recurring headline earnings of R245 million in 2021, increased by 36.9% from 2020 and 15.6% for the 2019 financial year.

Payment of dividend announced

Curro has announced the payment of a final dividend of 8.2 cents per share (2020: Nil) from income reserves for the

year ended 31 December 2021, with a payment date of 22 March 2022.

Investments and expansions for 2022

Curro invested R929 million in the business in 2021, which included the construction of Curro Durbanville's state-of-the-art new High School campus at Phesantekraal in Cape Town. The new Curro flagship campus opened on 13 January 2022. The enrolments at the new High School have exceeded expectations.

"Curro is committed to making a positive contribution to its communities and plans to invest up to R1.1 billion in the business in 2022. This is coupled with the finalisation of the acquisition of HeronBridge College, with the purchase price being settled once the property transfer has been registered," explained Greyling.

Some eye-watering numbers from the world's largest oil producer

SAUDI Arabia's Aramco's net income increased by 124% to \$110.0 billion in 2021, compared to \$49.0 billion in 2020. The increase in net income reflects higher crude oil prices, stronger refining and chemicals margins, and the consolidation of SABIC's full-year results.

Free cash flow was

\$107.5 billion in 2021, compared to \$49.1 billion in 2020. Aramco continues to prioritize a strong balance sheet and its gearing ratio at the end of 2021 was 14.2%, compared to 23.0% at the end of 2020.

Aramco declared a dividend of \$18.8 billion for the fourth quarter, to be paid in Q1 2022. The Board of

Directors also recommended that \$4 billion in retained earnings be capitalized and bonus shares be distributed to shareholders, subject to required Extraordinary General Assembly and regulatory approvals. Under the recommendation, shareholders would be granted one bonus share for every ten shares owned. As

a result, the total dividend for 2021 is \$75 billion in cash, in addition to bonus shares. The Company aims to maintain a sustainable and progressive dividend, in line with future prospects, underlying growth in free cash flow, and long-term value creation through investments in available opportunities.

First in-store vertical farm launched

Customers can now watch their lettuce and herbs grow

PICK n Pay has become the first South African retailer to launch in-store “vertical farms” to show customers a sustainable and locally-grown modern farming solution. The vertical farms will grow various lettuce leaves and herbs from seeds, right in Pick n Pay’s fruit and vegetable section.

This innovative farming method display in-store is a growing trend globally with supermarkets in Europe and US, such as Marks & Spencer (M&S) and Whole Foods Market, introducing grown in-store leaf.

Vertical farming is a sustainable and low carbon farming method using 95% less water, 85% less fertiliser and no pesticides. Liz van Niekerk, Head of Produce and Horticulture at Pick n Pay, says the displays



Pick n Pay becomes first SA retailer to launch in-store vertical farms.

should pique the interest of and strongly appeal to environmentally-minded customers, but especially

the youth, who will be able to see first-hand how produce grows and help connect them more to farming.

The initiative is in partnership with CAN-Agri – a vertical, hydroponic, greenhouse farm in Pretoria

– which has been a supplier to Pick n Pay for over three years, supplying produce under the PnP label.

The Pick n Pay-CAN-Agri in-store vertical farm has eight vertical ‘growing stacks’, each containing 10 plants, and will be a method demonstration of CAN-Agri’s commercial facility which has 24 rows with 200 ‘growing stacks’ spanning 6 m high. While CAN-Agri maximises sunlight from its greenhouse, grow lights will be used in-store as the produce won’t have exposure to natural light.

While customers won’t be able to buy produce directly from the in-store vertical farms, CAN-Agri will supply a new range of products, pre-packed in punnets made from recycled plastic, from its farm. This will include an assortment of salad leaves with different lettuces and herbs, whole baby butter lettuce heads and cos leaves.

CAN-Agri is a South African innovation using its own, globally patented technology. Its 3 200 m² growing area has the capacity to grow 384 000 plants. According to the United Nations², the global food supply will have to increase by 50% by 2050 to accommodate the projected demand for the world’s growing population. At the same time, there is an urgent need to cut greenhouse gas emissions but agriculture is one of the greatest contributors to global warming accounting for 24% of greenhouse gas emissions worldwide. Vertical farming is expected to grow by 25.5% over the next eight years due to the increased demand for urban agriculture and adoption of environment-friendly production of fruit and vegetables.

ADB estimates that SA would need more than \$30 billion for transition to renewable energy

AFRICAN Development Bank Group President Dr Akinwumi Adesina has assured South Africa of the Bank’s strong support as the country transitions from fossil fuel to renewable energy.

Adesina told Minister for Mineral Resources and Energy, Gwede Mantashe, that the Bank was in the process of setting up an African Energy Transition Facility to help South Africa secure adequate financing for its energy transition.

He said through the African Energy Transition Facility, “South Africa can leverage on the \$8.5 billion in grants from the G7 countries to generate all the money it needs for its just energy transition without getting into debt.”

The African Development Bank estimates that South Africa would need more than \$30 billion for transition to renewable energy.

The Bank is financing several renewable energy projects in South Africa, including the 100 megawatt Sere wind power plant, the 100 megawatt Xina solar power concentrated power plant, and the award-winning 100 megawatt Red Stone solar project. The Bank is also preparing

a \$400 million package to support the country’s electricity utility company, Eskom, as it transitions to renewable energy.

According to Mantashe, the government is committed to achieving a 15% reduction in coal power production and an 18% increase in renewable energy by 2030.

He said: “We want to move from high carbon to low carbon emission. The Just Energy Transition plan should be about people’s lives and livelihoods, particularly in coal mining areas. We must develop a concrete alternative economic programme for communities in those areas.”

The minister said the government was planning to generate an additional 1 500 MW of electricity from coal. “We want to be actively involved in the experiment for cleaner coal production technology, including carbon capture and storage...If the experiment works, we’ll expand it and that will relieve coal as a commodity.”

The minister said gas and nuclear were part of South Africa’s energy mix. He described gas as a game changer for development and cited Mozambique, whose economic prospects

have changed following gas discovery.

According to Adesina, solar power should be a key part of South Africa’s energy mix. “Be bold about solar power,” he said. “Africa today has no choice but to transition out of coal. But God is good to us. We have 11 terawatts of solar. That is Africa’s future. South Africa can help make that future happen. South Africa can become and should position itself to be the lead manufacturer of polysilicon.”

Polysilicon is used to manufacture solar panels and other products, which are currently imported mainly from China.

Mantashe told the African Development Bank Group president and his delegation that South Africa had discovered rare earth minerals, essential in manufacturing solar power components. “The minerals of the future that will contribute to a green economy are here,” he said.

Minister Mantashe said the South African government was considering using 10 million barrels of its crude oil reserves to control the rising prices of petroleum by suspending all taxes and levies for two months.

Beneficiaries’ rights to information in a trust

BENEFICIARIES are entitled to a certain amount of information about the trust of which they are a beneficiary and trustees have a duty to disclose that information. But trustees can sometimes be reluctant to disclose certain information, or it may be that beneficiaries are unclear about what they are entitled to see.

The trustee, or trustees of a trust are the guardians or custodians of the assets held in that trust and it is their responsibility to ensure that the trust’s finances and records are looked after and kept up to date. Trustees act according to the instructions of the founder of the trust as set out in the trust deed, which is the founding document for any trust.

Their functions generally include; recording expenses and income, distributing funds to beneficiaries, filing tax returns on any income the trust generates and keeping record of other transactions that occur. “What this means is that a trustee is acting as a fiduciary – they are looking after the assets in the best interest of the beneficiaries of the trust in good faith,” explains Katherine Timoney, associate at boutique, commercial law firm Gillan and Veldhuizen Inc.

Because of this fiduciary relationship, a trustee is bound to



report on the trust’s affairs to a beneficiary so that the beneficiary can establish, for example, what if anything, they are entitled to have distributed. One does in fact have a right to see trust documents which set out the terms of the trust, the identity of the trustees and the assets within the trust, along with the trust deed.

In a comparatively recent case which decided on this obligation owed by the trustee, Doyle v Board of Executors [1999] 1 All SA 309 (C), in which a capital beneficiary (who would be distributed the trust’s capital when it dissolved and distributed) requested a full audit from the trustee on what had been done during the lifetime of the trust. He was refused on the grounds that he only became a beneficiary after his mother’s death.

The Court found that:

“On her death he became entitled to receive the trust capital. However it had been invested or reinvested over the years, it was to be passed on to him. Consequently, the defendant was bound, on handing it over, to satisfy him with proper explanations, that it was what it purported to be; the full and true trust capital, no more and no less. This it could not do simply by furnishing him with unvouched and untested opening and untested account. It is therefore bound, in discharge of its duty of good faith, to demonstrate to him that that which he has received is the correct product of the initial capital, properly administered.”

“Beneficiaries are therefore entitled to an accounting from trustees relating to the benefit that they are due to receive,” says Timoney. In this case the beneficiary was

to receive the capital of the trust and so he was owed an accounting of the trust’s capital for the duration of the trustee’s tenure as trustee of that trust – to enable them to confirm for themselves that the amounts are correct and to hold trustees to account as fiduciaries for their management of the trust’s assets on their behalf.

Disputes often arise between trustees and beneficiaries and sometimes even between fellow-trustees. “In these circumstances and to avoid potential costly and lengthy court proceedings to resolve issues, donors and those who draft trusts should consider the insertion of an alternative dispute resolution clause in trust deeds catering for mediation and arbitration,” advises PJ Veldhuizen, MD and dispute resolution specialist at the firm.

For more information visit: www.gvinc.law.za

Learners access study material via cell phone



Dacod Magagula and Tao Boyle.

FOONDAMate has developed a solution for learners in grades 10 to 12 who struggle to download educational information or past papers from the internet. Compounding the problem is a lack of facilities at schools, which makes printing study materials, for example, nearly impossible.

FoondaMate was developed by Dacod Magagula, who grew up in Mbombela, and Tao Boyle, who grew up in Cape Town.

"For many South African learners, a lack of access to the internet is a massive concern," says Magagula. "The financial commitments associated with owning a computer, coupled with the excessive cost of data, have left many students at a disadvantage. "Now, with FoondaMate, all a student needs is a smart phone with a small amount of data to access a world of information."

Use of the service is free.

FoondaMate creates AI-powered WhatsApp and Facebook Messenger chat bots that deliver study notes, research information, past papers and even solve algebraic equations in plain text format. And it does all of this in less than a minute.

"It's like having a 24/7 study buddy on your phone," says Magagula.

"Most learners are already using WhatsApp and Facebook Messenger on their phones," says Boyle. "We're building on top of the apps they already use and turning them into educational tools."

Over the past year, FoondaMate has seen over 350 000 students using its chat bots.

Magagula says, "We've seen that students are tired of spending their time figuring out how to get study materials. They want to spend most of their time

studying. FoondaMate helps students spend less time and money on finding resources, and more time actually studying."

For teachers, the platform offers an easy way to teach students research skills, set homework assignments and ensure their learners get help preparing for tests.

The service works on a single phone number or via the Facebook page @foondamate.

Students wishing to set up a profile should simply WhatsApp the word "Hello" to 060 070 3213, answer a few questions about themselves, and start asking questions. If they want to use the Facebook Messenger version they should just DM @foondamate on Facebook Messenger.

FoondaMate helps learners in all 11 of South Africa's official languages, plus Shona.

Visit www.foondamate.com for more information.

E&I works for new gold plant project

IN August 2021, Solid Wedge, an electrical and instrumentation solutions provider, was awarded a project for the supply and installation of electrical and instrumentation (E&I) works for a new gold plant.

LLOYD Dzinotyweyi, MD of Solid Wedge, says due to the criticality of the project to the client's expansion plans, it came with both time and budget constraints. The company's record in executing projects of this nature therefore stood Solid Wedge in good stead during the tendering process.

"Our relevant experience in previous similar jobs was key to the awarding of this project," says Dzinotyweyi. "This was complemented by our unparalleled responsiveness to the client's enquiries during the tendering process, as well as our competitive pricing."

The scope of the project



includes procurement of part of E&I equipment and accessories; installation of procured and free issued E&I equipment and accessories; commissioning of all E&I works and final project documentation and handover.

With a five-month timeline, the R8-million project commenced in December 2021 and is due for completion in

May this year, on time and within budget.

"The project will be delivered on budget and within the five-month timeframe as per contractual agreements. We are proud of the way we have managed to rise above challenges on this project. Our client has commended us for good workmanship," concludes Dzinotyweyi.

No more Empty Trips

EMPTY TRIPS was designed to address one of the biggest inefficiencies in the traditional logistics space – trucks returning empty from deliveries – by making those trips available to customers (shippers) directly via a smart freight-matching platform. Besides helping turn wasted road miles into income for hauliers, the platform gives shippers access to the best deals from a large fleet of reputable transporters who bid for cargo on an open exchange.

Andrew Crafford, Empty Trips managing executive, says, "For a country like South Africa, where roads are relied upon to transport goods, higher logistics costs ultimately translate into higher prices of goods for the end customer. The Empty Trips platform will



bring efficiencies and greater transparency to the sector, make shipping more cost-effective, increase the availability of reliable haulier options for shippers, and increase supply chain visibility."

Supply chain visibility is increasingly important for logistics managers, driven by a greater incidence of disruption, changing customer requirements and the need for better

operational efficiency. One of the key benefits of Empty Trips is that it allows shippers to monitor deliveries in real time and to manage their contract seamlessly and transparently. The platform provides instant proof of delivery and invoices and payments are consolidated automatically, enabling administration to be concluded timeously and efficiently.

According to Crafford, the Empty Trips platform makes a fleet of over 3 600 trucks available to shippers.

Based on their available transport space and route at a given time, the platform's algorithms match available capacity to loads to be moved. Carriers can then bid securely and anonymously, with payment secured through the platform.

Town and regional planning – 'inconsequential and a waste of money'

By **Burgert Gildenhuys, Director: BC Gildenhuys & Associates and Spatial Data Services Africa**

THE extent to which urban planning has degenerated into a more or less meaningless self-centred humdrum with little or no impact on the future of our cities stands out like a sore thumb to all experienced and capable town and regional planners in South Africa.

Two examples illustrate this:

First, the Spatial Planning and Land Use Management Act (SPLUMA) and spatial development frameworks (SDF's) are the holy grail of urban planning and the instrument to bring prosperity to our cities. However, it is hard to find a single SDF in South Africa that achieved any of it's (and SPLUMA) objectives in even the slightest measure. Instead, spatial planning morphed into a generic guideline-driven compliance exercise with little or no regard to local issues and problems.

Secondly, the value of the urban and regional planner declined to a level where the profession must seek legal protection through agitation for job reservation when it cannot survive based on the value of superior services to its clients and the community at large. Underlying this

is "land use planning" relegated to a legal-administrative process requiring little or no planning skills.

The challenges mentioned above highlight the need for weighty introspection by all stakeholders involved in town and regional planning (TRP). This article addresses the issues that may contribute to the low value and inability of town and regional planning to impact our cities' future positively.

The core issues underlying the current state of TRP are:

1. Lack of Technical Skills

Work produced by town and regional planners reflects the low quality (qualitative and quantitative) of town and regional planning.

2. One cannot plan for things you cannot control or implement

The founding basis of Town and Regional Planning were interventions to improve health conditions in urban communities. But, it has escalated to an all-encompassing desire to control every aspect of urban development and human activities.

3. The town and regional planner has no understanding of the implications of their actions

South Africa developed an obsession with

plans. We present plans as the solution to our problems. However, reality proves time and time again that a plan in itself is meaningless. Nevertheless, if the required outcomes do not materialise, we re-do the plan, or, even better, we introduce a new plan.

Currently, spatial planning is a fruitless and wasteful expenditure, as defined by the auditor-general, as it is undertaken without value or substance and does not yield any desired results or outcomes.

4. As problems deepen, the gallery of cheerleaders grows

Our development challenges are well documented and known. The fact that governmental and especially municipalities battle with managing urbanisation and meeting the delivery demands escalate planning challenges daily.

However, as these problems grow, the number of planners who can address these challenges decreases. But as the skills base declines, the number of advisors and persons telling others what and how to do planning is rapidly growing.

5. A confused and mixed up implementation environment

The role players overseeing planning and development in South Africa are the Depart-

ment of Agriculture, Rural Development and Land Reform (DARDLR) – as custodians of spatial planning, Constitutional Development and Traditional Affairs (COGTA) being responsible for local government, and National Treasury (SANT) holding the purse strings.

The crown jewel in this somewhat confusing institutional setup is the National Department of Housing and its agencies that cut across all spheres of local planning and may prove to be the most significant contributor to unsustainable local government and dysfunctional urban structures in South Africa.

The general picture is bleak and necessitates a fundamental rethink of planning and our town and regional planning approach. Town and regional planning in South Africa is everything but sustainable and integrated.

Unfortunately, inaction may result in town and regional planning being the first profession to disappear in the twenty-first century due to irrelevance and incompetence.

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Article abridged. The original can be found at <https://www.bcga.co.za/town-and-regional-planning-in-south-africa-inconsequential-and-a-waste-of-money/>

3 000 tanks in 27 countries, and counting

Continued from P1

45001:2018 accredited and has invested in research, engineering, and design technology to ensure the effective provision of solutions to the fixed fire protection, mining, commercial, municipal and water conservation sectors.

SBS is a long-standing member of ASIB, (Automatic Sprinkler Inspection Bureau) and all SBS fire tanks comply with SANS10160 and with the 13th Edition Rules ensuring an effective and safe fire-sump solution to protect both lives and assets in the event of a fire.

The modular panel nature of the tank results in a quick installation times and makes SBS tanks suited to installation on even the most remote and rugged terrain.

Varied markets

SBS supplies many industries from the commercial sector, manufacturing, property development, fire and back-up water and water conservation solutions, to the agricultural, mining and municipal sectors. Tanks can be retrofitted on limited footprints – exterior to or in the interior of a building or structure – or elevated above the ground for increased water pressure, popular in rural mining and municipal applications.

“The SBS vision is to continue to grow the company’s global footprint...”

Built to last in excess of 65 years, SBS tanks are also designed to withstand a range of weather conditions. The SBS Standard tank range has a wind rating of up to 140 km per hour and capacities from 12 000 to 4 million litres. The SBS Cyclonic tank range is engineered to last and rated for regions with a high incidence of meteorological hazards such as tropical storms, hurricanes, cyclones, typhoons and other high-velocity wind events of up to 240 km/h. The weight and thickness of the roof sheets, trusses and body panels are dramatically increased to meet aggressive wind loads.

Not only water storage

The comprehensive range of over 500 sizes are suited for the storage of water and other liquids, which are stored within a liner or bladder, away from the trademark Zincolume tank panels, helping to

protect against corrosion. SBS tanks have been effectively used in desalination, wastewater and effluent treatment plants as well as for water storage.

Being built using a modular system, from the ground up requires no heavy equipment on site or road access in the case of remote locations.

A range of liners to suit any application

Liners used are specifically suited to the application required and consist of a high tenacity polyester yarn coated with black PVC. SBS potable water liners for use for drinking water are approved to international standards.

100% locally manufactured

SBS Tanks are manufactured in Pinetown, near the busy Durban seaport and transported across South Africa, into Africa and across the world to provide sustainable and durable water security solutions.



Typical SBS Tanks fire storage installation.










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-  Engineer designed to SANS 10160 standards
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-  Range includes Standard, Econo and Cyclonic water tanks
-  ISO 9001:2015 and ISO 45001:2018 compliant
-  Vast range of tank sizes - capacities from 12000 litres to 3.3 million litres

Continuous engineering and design improvements place SBS® as a leader in the fire suction tank industry. SBS® is the preferred supplier on many prestigious fixed fire protection installations worldwide and the preferred choice for leading fire consultants.

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Grundfos DMX mechanical dosing pumps installed in a major municipal waste water treatment plants for dosing of Ferric Chloride.

Merits of mechanical and digital options in dosing pumps

DOSING pumps play an important role in many industries from mining and wastewater treatment to pharmaceuticals and food production – and are available in a growing range of mechanical and digital options.

“Choosing the right pump starts with understanding the respective areas where mechanical and digital dosing pumps excel,” says Tshephang Sithole, sales engineer - water treatment at global pump special-

ist Grundfos. “While high flows and high pressures might be prioritised in some applications, for instance, other users need to focus on accuracy or remote-control functionality.” Sithole points out

that many industrial applications such as water treatment plants or mining will tend to need a robust solution that delivers large volumes of water at pressures of up to 150 bar. There are still certain automatic functions, though, depending on the configuration.

“While Grundfos’s basic range of mechanical dosing pumps requires an operator for most functions, our analogue relay (AR) range has additional features such as an automatic stop when the chemicals are depleted,” he says. “Furthermore, the D-range has servomotors to automatically set the stroke length, thereby adjusting the dosing flow.”

This is done with a 4-20 mA signal that can be remotely transmitted from a SCADA system or other digital input. Variable speed drives (VSDs) can also be fitted to these pumps, and the frequency can be adjusted up or down to vary the dose.

Digital dosing pumps, by contrast, come with a range of features that make them most suitable for automated plants or where higher levels of monitoring and control are required, including remote functions. Grundfos has been a pioneer of digital dosing for over 20 years.

“Automation functions are particularly valuable for companies who have plants in different parts of the country,” he says. “If loadshedding leads a pump to trip, for instance, an alarm will notify the user, and they can remotely reset and restart the operation.”

They are also preferred where accuracy of dosing quantities is prioritised, or where dosing volumes are very small.

Some digital dosing pumps boast high turn-down ratios as low as 1:3,000, and can deliver pressures of down to 0,002 bar.

“They can even pick up leaks in the line, and will help prevent liquid losses by automatically alerting the operator,” he says.

The automatic de-aeration function is another valuable element in advanced digital dosing pumps, allowing them to detect and remove bubbles from a line. This is important as bubbles will impair the accuracy of dosing.

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New shareholding for BB cranes

CAPE Town crane manufacturer BB Cranes has upgraded its manufacturing capacity as part of a transition to becoming a wholly-owned subsidiary of the Condra group of companies.

The acquisition is expected to substantially increase BB's share of the Western Cape market over time. It became effective on March 1st.

Johannesburg-headquartered Condra is a leading manufacturer of custom-designed overhead cranes, portal cranes, jib cranes, hoists and general crane components for countries throughout central and southern Africa, as well as for specific countries in North America, South America, Asia and Eastern Europe.

Commenting on the new shareholding, BB Cranes director Barry Brink said that the additional resources of the Condra group would expand his factory's manufacturing and refurbishing capabilities, increasing capacity and improving productivity.

"We will be able to manufacture more cranes more quickly and efficiently than before, and we will be able to more energetically serve the Western Cape market," Brink said.

"Our focus will continue to be on the Western Cape Province. Our intention is to reach additional customers and to expand our base of over 400 successful installations."

Brink said that the first of the factory upgrades resulting from the changed shareholding, a girder jig, had already been installed and commissioned to enable quicker, more efficient manufacture of cambered girder box sections, reducing production time by some 75 percent.

BB Cranes' staff and branding will continue unchanged. The company will operate independently within the Condra group, and existing staff will continue to service the customer base.

A condition of the acquisition is that all staff retain their jobs. The management team is to remain in place, and the expertise of founder Barry Brink, now in semi-retirement, will continue to be available to all customers whenever needed.

BB Cranes was originally formed in 1992 to marry crane girders and electrification

systems manufactured in Cape Town to technically complex hoists, crabs, end-carriages and other crane components supplied by Condra, saving customers the cost of transport between Johannesburg and the Mother City.

Majority-owned by Condra since 2016, the

company is currently working towards the ISO 9000 certification of the parent group.

Cranes made by BB have shown a steady increase in size over the years, from the 11-metre-span overhead gantry cranes manufactured in the original Paarden Eiland factory, to the

25 and 26-metre spans of recent orders made at the current works in Rivergate Industrial Park. Though the majority of new deliveries have spans and capacities of around 20 metres and 50 tons, the company has the ability to deliver cranes with spans of any length, and capacities

of up to 250 tons.

The majority of orders are for single and double-girder electric overhead travelling cranes, and for portal machines.

There are four service teams to supply installation services, load testing, commissioning and maintenance capabilities.

Recent contracts have included a 5-ton portal crane for Everflo (refrigeration systems), a 16-metre-span 20 ton portal crane for a local power station, and two 5ton container handling portal cranes for Bumbo (baby products).

Ongoing work is provided by orders for

overhead travelling cranes placed by wastewater treatment works. BB Cranes enjoys a competitive advantage in this market because of the shot-blast zinc metal spray paint specification, supplied in South Africa by only one company which is also based in Cape Town.



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Condra cranes and hoists are without equal in their quality, performance, reliability and overall lifetime cost. Operating data and the experience gathered from installations around the globe are today incorporated in all Condra products, the endurance of which has been proven in highly corrosive and abrasive environments, and under wide extremes of temperature, humidity and altitude. Technical support, service and spare parts delivery are guaranteed worldwide.



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Water and sanitation crisis 1 – Some green shoots?

Following the recent Water Summit held in Midrand, CBN Editor **Robin Hayes** discusses some positive outcomes with **Benoit Le Roy**, founder and CEO of the South African Water Chamber NPC.



Benoit Le Roy, CEO of the South African Water Chamber NPC.

“THE appointment of Senzo Mchunu as the new Minister of Water and Sanitation and the permanent appointment of Dr Shaun Phillips as Director General, is seen by many as Government’s first real step to tackle the long running crisis in water and sanitation” said Le Roy “It is encouraging that the Minister’s willingness to engage with a wide spectrum of water and wastewater

experts, industry leaders, non-profit organizations, environmentalists, the government in all spheres and water boards to finally understand the problems we face, will hopefully lead to positive action. The Minister’s directive to immediately re-establish the Green Drop monitoring programme is seen as a positive first step” he said.

The plethora of reports of contaminated drinking water and the discharge of raw sewage into rivers and water courses is virtually a daily occurrence with academics and health professionals warning of the potential of outbreaks of cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio – some of which have already occurred in both urban and rural areas of the country.

The crisis in sanitation in South Africa is not a new phenomenon.

It has been worsening for well over a decade judging by the number

of reports, plans and policy documents initiated by amongst others:

- The CSIR – State of Water & Sanitation in SA, - 2006
- SA Medical Journal who said in 2009 that “85% of sewage infrastructure is dilapidated”
- SAICE through its State of the Infrastructure reports – Infrastructure Report Card, 2010 & 2017
- DWS (Dept of Water & Sanitation), - 2016 – National Sanitation Policy Draft
- AfriForum – Blue & Green Drop Report - 2019
- The Helen Suzman Foundation - 2019 The State of Sanitation and Wastewater Treatment
- Human Rights Commission Report – 2021 and of course the
- Annual Auditor General reports.

All these reports and policy documents, drafted by eminent academics, economists, financial and engineering professionals say the same thing – highlighting the problems of capacity, mismanagement, incompetence and corruption and putting forward remedies, yet little or nothing has been done except, more reports and planning documents.

“We are now confident with a tough, no nonsense Minister and a professional manager in the shape of Dr Sean Phillips in charge, (whose acting appointment was recently confirmed as permanent by Cabinet,) that we have reached a ‘watershed’ moment. However, it will take time to overhaul a moribund and politically toxic system where skilled professionals have been chased away by highly restrictive policies over the past 20 years. Filling these massive skills ‘holes’ at all levels –

within the three tiers of government, water boards, and technical skills at treatment plants, will not be an easy task.

“While the DWS will without doubt be prioritising skills development programmes, to be rolled out at all levels, there now seems more of an appetite, no doubt driven by the crisis and risk to public health, to engage more with private contractors, technology purveyors and the engineering consulting fraternity, to mobilise the skills base we have” continued Le Roy.

“There is no shortage of technology but unfortunately there is no silver bullet and it is clear that the politicians such as Minister Mchunu are now facing the reality and are prepared to relinquish levels of control to the private sector that can provide strategy, the finance, management and technical expertise to implement business principles to solve the problems.

“The DWS report / policy draft in 2016 estimated that to fix South Africa’s sanitation problems would cost R293-billion. No doubt a revised cost estimate is being worked on as we speak and where the money will come from” concluded Le Roy. The Water Sanitation Master Plan published in 2018 states that the quantum is R900 billion, the SA Water Chamber believes that in 2022 it is in excess of one trillion Rands.

It is a damning indictment of Government policy that no errant municipalities or responsible officials have ever been prosecuted or even held to account for the catastrophic failure of sanitation services. Some have even received promotions or been moved to other portfolios!

The responsible government department – DWS – themselves highlighted in its 2016 National Sanitation Policy Draft,

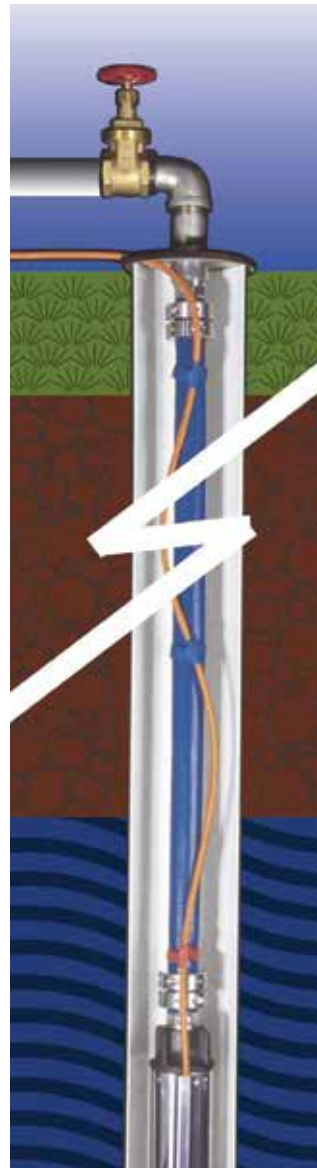
- 75% of SA’s 852 sewage treatment plants - 639 - do not meet the minimum standards
- Of the 852 treatment plants, over 400 could not be assessed, and of the 203 remainder, only about 50% met the minimum standards
- On the topic of skills shortages, seen as a major contributor to the crisis, it stated that “in 1994 there were 20 engineers / 100 000 of the population”. At the time of writing in 2016, this figure had dropped to 3 / 100 000.

In the absence of Department sponsored Blue and Green Drop assessments, AfriForum conducted its own and in 2019 of the 124 sewage plants tested that year, 65 did not comply with set standards and said “A major concern is that so many plants are releasing sewage into our rivers...”.

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Case Study: The Eco Clarity Grease Trap Waste Disposal Hub

Fabrinox spokesperson describes the manufacturing processes for this revolutionary development.



Fitting out the containerised plant.

AT the start of 2020 we were approached by Eco Clarity, a waste to energy service provider, to assist with the development of a patented modular and scalable technology, for the efficient and cost-effective disposal of Grease Trap Waste (GTW). The goal was to create a plant that would collect a certain amount of GTW via trucks, also named honey suckers, from grease traps at local establishments in the Netherlands, where there is already an established practice of GTW collection from collection points in the catering industry.

As a company that has spent almost a decade developing breakthrough technology to transform the wastewater handling process from one of disposal, into a focus of conversion into beneficial feedstocks and clean water, the Eco Clarity team's goal was to ultimately collect and separate the significant portion of oils, fats and grease (FOG) in GTW, which can be sold separately and also used in the production of biodiesel in Europe.

In March 2020, just as lockdown was implemented worldwide and subsequently in South Africa, we began working on the layout and specifications of the trial plant, however with the Eco Clarity team stuck in England at the time, our work

was done through online meetings, which came with its own set of challenges.

The Fabrinox team, under the leadership of our Sub-Assemblies and Projects Account Manager, Louw van Rooyen, was responsible for assembling the entire plant along with sourcing several components on the customers behalf. We also manufactured and adapted existing equipment to be used for this specific project. One such example is the shipping containers we modified in order to provide a protective shell around the system, better equipping the plant for travel. This system can collect and separate 50 tons of GTW daily.

Thanks to our teams wide range of capabilities, we also assisted with the manufacturing of the tank and pipe fitment, providing equipment support structures and build documents, liaising with suppliers and subcontractors and completing FAT factory acceptance testing. With the support of various specialist subcontractors we were also able to provide a solution which allowed automation and IOT. The plant can therefore be monitored and critical functions controlled via a remote internet portal.

Since certain equipment was not available in South Africa and had to be installed

on site in the Netherlands, we spent a large amount of time ensuring that the plant and the missing equipment would integrate seamlessly. To this end, we also included spare parts and installation equipment with each container before shipping, to ensure the Eco Clarity team had everything required to complete the installation process. Towards the end of November 2020, the first containers were well on their way to their end destination.

Afterwards, Louw and our subcontractor's Automation Engineer flew over to help with the final installation on site. And of course, as with any test, they had to handle a few challenges and technical surprises, which they were able to resolve, enabling the customer to run further tests in order to determine the system limits.

The Netherlands trial was a great success. The valuable lessons learned have enabled the team to develop an enhanced next generation plant scheduled for delivery to Argent Energy's UK site during the first quarter of 2022.

To find out how we can assist you in bringing your project to life, please feel free to contact our team at info@fabrinox.com or call +27 (0)21 877 5000.

Water and sanitation crisis 2 - Huge knock on effects to local manufacture

Elsewhere in this issue the Editor discusses the crisis in water and sanitation and the possibility that a change of policy and individuals at the top may finally put the country on a road to recovery.

The same cannot be said for industries that rely on a vibrant and well managed water and sanitation sector – those industries may never recover.

Editor Robin Hayes talks to Howard Jones, chairperson of the SA Pump Cluster who paints a distressing picture of the consequences caused to this sector through government interference, incompetence, corruption and maladministration. This situation has been compounded by cheaper, and in some case superior quality products made in China and the decision by pump majors to remove their manufacturing capabilities from South Africa due to competition, Government red tape and corruption. Jones elaborates.

“THE SA Pump Cluster was formed in 2013 as an offshoot of the SA Pump Manufacturers Association, following an initiative from the DTI (Department of Trade and Industry) to create pump products that would feature 70% local content and therefore become ‘designated’ suppliers to SOE's, water boards, municipalities and the like – with the aim to stimulate vibrant local primary and downstream manufacturing

industries.

“The procedure to be followed according to the DTI was that in our case, the Pump Cluster would be consulted when public services went out to tender for pumps, to determine whether the specifications could be met through local manufacture or not, and a list of designated suppliers would have the opportunity to tender.

“Specifications not only relates to a pump's performance, but also its physical dimensions which may not be the same as the pump being replaced. One overseas manufacturer has supplied over 80% of the sewage pumps to the 257 municipalities and their wastewater treatment plants around the country and when due for replacement, a local equivalent may not fit into the existing pipework design, necessitating further expense in modifying pipework, foundations and electrical connections.

“In a perfect world, the DTI initiative would be a perfectly reasonable initiative to follow but it presupposes

a) that the public sector follows the rules and b) a continuous demand from the water & wastewater sector in terms of replacements and pumps required for plant extensions and new works. A quick thumb-suck would show that in the perfect world scenario that would mean a local pump industry could rely on perhaps R30 billion of pump contracts per

annum from the public sector alone.

Once the existing infrastructure has been restored and upgraded, the yearly cost would reduce significantly if proper preventative maintenance rules are followed.

“The near collapse of the water & wastewater treatment sector means that this hasn't happened and is unlike to happen in the near future. This calamity of collapse has had near lethal consequences for the local industry as well as the environment

Maladministration and corruption

“Instead of following the DTI procurement recommendations of designated suppliers, public service organisations have purchased pumps directly from China, often through crony ‘agents’.

Chinese manufacture

“It opened the door for Chinese manufacturers to supply what pumps were required at up to 30% cheaper than a local equivalent, and of superior quality.

Collapse of the foundries

“The foundry industry has also suffered badly in two ways – firstly the demand for pump castings has declined dramatically, and secondly often family run foundries were slow to meet the changes of technology and processes that made the Chinese qual-



Howard Jones.

ity superior. Lines of succession also suffered as the foundry industry is seen by the new generation as not the most attractive place to work!

Pump majors exit

“Major international brands have taken a long hard look at their ROI of operating in this environment and in some cases refocused their businesses closing down or reducing their exposure here, supplying our local market through agents from other more profitable, less onerous manufacturing centres overseas. During the 1980's there were 15 local manufacturers of borehole pumps in the country, now there are none.

So what is to be done to reverse this self-fulfilling prophecy?

Jones replies: “Until there is the political will to stem this downward spiral and those at the top crack the whip on the miscreants who foster corruption and flout the rules, nothing will change. Let's hope that the new Minister and DG of the DWS have the fortitude to turn the situation around.

A decade of success for DWU pump

ACCORDING to Weir Minerals Africa head of engineering Christian Stehle, the Warman® DWU pump was designed to fill a gap in the market between conventional slurry pumps and clear water pumps. It succeeded in combining the best of both pump categories, to create a product with the wear resistance and robustness of the slurry pump and the efficiency of a clear water pump.

“We wanted a solution that would meet the needs of customers who wanted to pump water with a specific gravity of up to 1.05,” says Stehle. “They usually needed to do this over long distances, and often with high heads.”

He notes that the Warman® DWU pump is able to deliver high

performance along with energy efficiency and reliability, without being susceptible to high component wear rates and premature mechanical failure due to dirt levels in water.

The first unit was sold in September 2011 to a mining operation in the Limpopo province town of Phalaborwa, and delivered such good results that the customer went on to purchase more of them. As the Warman® DWU pump was marketed through the global Weir Minerals network, it has also established itself in markets as far afield as Canada.

The range has been enhanced over the years on a number of fronts, including its materials of construction. It is



now available in stainless steel and in other hard-wearing materials for acidic applications. Initially developed with the traditional gland seal arrangement, it now includes the mechanical seal and the centrifugal seal as options.

Modern manufacturing techniques have resulted in improvements to the range he says which includes 3D modelling of complex shapes, as well as 3D

printing technology and the application of Computational Fluid Dynamics (CFD).

“The success of this pump in as little as a decade is a testament to Weir Minerals Africa's design and manufacturing capability, as well as our understanding of customer requirements,” he says. “We continue to work closely with customers, turning needs into solutions for a sustainable mining sector.”

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The role of oil analysis in wind turbine reliability

By Steven Lara-Lee Lumley, Technical Manager, WearCheck



ACCORDING to a new analysis published by the Global Wind Energy Council (GWEC), South Africa added 515 MW of new wind capacity in 2020, cementing its wind leadership on the African continent.

By the end of last year, South Africa had 2 500 MW of cumulative wind capacity installed, representing about 34% of the 7 300 MW of capacity installed across Africa and the Middle East.

The DoE's Renewable Energy Independent Power Producer Programme (REIPPPP) has resulted

in the construction of several wind farms over the last few years that collectively house in the region of 1 400 wind turbines.

In October of 2021 the Department of Mineral Resources and Energy (DMRE) announced the preferred bidders for the Fifth Bid Window (BW5) under this programme which will see a further 1 600MW of onshore wind energy being developed.

The adequate functioning of most utility-scale conventional wind turbines depends to a large extent on the performance of the gearbox. They are typically configured to have planetary gearsets and bearings that require special attention due to their extreme operating conditions and high lifetime expectations.

The wind turbine gearbox is the most critical component in terms of high failure rates and down time.

According to a study published by the National Renew-

able Energy Laboratory (NREL) the mean downtime for gearbox failure was in the range of 6-15 days for a study performed on European on-shore wind turbines over a 13-year time period. The same study also looked at data representing about 27 000 turbines ranging from 500kW to 5MW over a six-year period and found that the cumulative downtime caused by gearbox failures was more than one hundred and fifty thousand hours.

Further analysis found that 76% of gearbox failures were bearing-related and mostly due to High Speed Shaft (HSS) & Intermediate Speed (IMS) bearing axial cracks.

Therefore, reliability is essential to the success of wind energy systems, and this requires appropriate condition monitoring of sub-systems like the gearbox. It is for this reason that condition monitoring techniques like oil analysis are considered far more effective predictive/proactive tools

for achieving optimum gearbox performance as, in the case of oil analysis, the technique can be used to detect the onset of early damage as well as tracking the severity of the damage.

The three main objectives of oil analysis are to monitor the health of the gearbox, monitor the health of the oil and monitor contaminants. Active monitoring of the above provides early warning of abnormal operating conditions that can lead to catastrophic failures if not corrected.

The test slate offered by WearCheck as part of their wind turbine oil analysis programme is designed to achieve these functions.

To illustrate the potential savings that could be realised with a proactive maintenance strategy like oil analysis the following cost benefit analysis was performed.

For the purpose of this analysis the assumption has been made that a utility scale wind turbine costs about ZAR 17 mil-

lion per MW of capacity.

With replacement of the main gearbox being approximately 10% of the overall wind turbine cost, replacing a 3MW wind turbine gearbox could easily exceed R5.1 million with transportation, crane rental etc. Over the 20-year expected life span of the wind turbine the main gearbox is expected to be replaced 2.2 times due to failure.

If the gearbox life could be extended by even one year, the replacement costs associated with the wind turbine life cycle will be reduced by R561 000 per turbine.

Applying this savings to wind farm with 50 – 3 MW turbines equates to a savings of more than R28 million over the life cycle of the wind farm. The saving does not take into consideration the down-time costs associated with loss of electricity production which in itself would be validation for a proactive maintenance programme of this nature.

Private electricity trader set to transform SA energy

A new South African private electricity trading company has recently been awarded a landmark licence that allows it to transport energy from independent power producers (IPPs) to private end-users in any location across the municipal and national electricity grid.

Awarded in February 2022, Enpower Trading is the second private electricity trading company in South Africa to be granted a trading licence by the National Energy Regulator of South Africa (Nersa), and the first to be awarded such a licence in over 12 years.

The license enables Enpower Trading to source competitively-priced, predominantly renewable power from multiple IPPs and small-scale generators, transport or 'wheel' this energy across the national and municipal grid networks, and sell it to customers at a discount to prevailing

electricity tariffs.

Nersa's awarding of this licence represents a critical step forward in the Department of Energy's roadmap, which plans for the unbundling of Eskom's generation, transmission and distribution business units to enable the transition from a single-buyer model to a more competitive domestic open market model.

An August 2021 amendment to the Electricity Regulation Act exempts embedded electricity generation projects between 1 MW and 100 MW from the previous requirement of applying for a generation licence, requiring them only to register with Nersa.

This regulatory relaxation is expected to drive an increase in the number of South African IPPs and small-scale embedded generators (SSEGs) and consequently, the availability of independently-produced renewable energy.



WearCheck is Africa's leading condition monitoring company.

Our specialist wind turbine gearbox and hydraulic oil testing programmes ensure reliable power supply with reduced risk of unexpected failure.

Healthy turbines keep clean energy flowing!

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Product Self-Compliance, a challenge to the regulatory process?

Degeneration of SABS Test facilities

The SABS technical staff complement has declined to around 20% of that before re-structuring and funding for maintenance and upgrading of test equipment and the sustainability of accreditation of testing services are under serious threat.

The ban on partial testing which SABS introduced attempting to increase test income has impacted on local manufacturers, because partial testing is a critical component in product development. This partial test ban had the opposite effect and resulted in a significant reduction in the SABS's client base.

Manufacturer's Test facilities

Although several private accredited laboratories (3rd party) have been established, manufacturer's own 1st party test expansion and development creates the opportunity towards the gradual implementation of Self-Compliance formally known as Supplier's Declaration of Conformity (SDOC) model (SANS 17050) which is widely used in other countries and is the model on which the European CE mark is based.

Self-Compliance

The formation of the SAFEhouse Association was aimed at counteracting the proliferation of non-compliant electrotechnical products in the South African market by introducing a Code of Conduct for its members that commit to the supply of products complying with the applicable national or international standards and/or compulsory specifications.

The SAFEhouse Association recognizes the need for an effective regulatory system and has shown its commitment in engaging with the regulatory authorities to raise industry concerns on specification development and MVE matters. Due to limited progress in these engagements, the need of electrical contractors and the public in general to enable the selection of compliant product has been recognized, which can only be resolved by a focus shift to Self-Compliance.

SAFEhouse members are strongly

advised to implement appropriate procedures such as: - product selection based on manufacturer supplied data, incoming goods inspections, verification/routine testing, handling of complaints, and corrective action procedures, etc. Verification testing initiated by SAFE-

house is conducted by independent accredited local test laboratories that are prepared to conduct partial testing.

While many products used in fixed electrical installations are "regulated" through the requirements of SANS 10142, the Self-Compliance

model could be very effective and will enhance consumer confidence.

Customer Expectations

It is envisaged that more companies will follow the Self-Compliance Approach through their indus-

try associations, and thereby re-establish a "fair-trading" environment, where the consumer can rely on product compliance supplied by those identifiable industry association members.

For more information info@safehousesa.co.za



Safety testing.



OUR GOAL IS TO ENSURE SAFE & COMPLIANT PRODUCTS IN SOUTH AFRICA



The SAFEhouse Association is a non-profit, industry organisation committed to the fight against sub-standard, unsafe electrical products and services imported and manufactured in South Africa.

PROUD MEMBERS OF THE SAFEHOUSE ASSOCIATION



For more information contact: connie.jonker@safehousesa.co.za | barry.oleary@safehousesa.co.za | safehousesa.co.za



Energy transition for C&I customers top of the list at Enlit Africa

THE global energy sector has seen significant developments over the past 24 months – not only has the world been adapting to the realities of life with COVID-19, but the trajectory of climate change discus-

sion has changed. Multiple countries around the world are aiming for NetZero emissions between 2040-2050 and calls for Africa to fast track its energy transition are on the increase.

However, the energy

transition is not just affecting utilities - it is also impacting commercial and industrial entities in a way that deserves attention. Specifically, we are talking about the tectonic shift from being mere consumers

of energy to becoming producers of that same energy. As the role of 'prosumers' (a producer-consumer) in South Africa is gaining ground, there are important questions to be answered – around the role of storage, technology, legal and regulatory requirements and how to get started. We plan on bringing this important conversation to the table at Enlit Africa, exploring self-generation and storage in mining, agriculture, commerce, industry and even in municipal circles.

More broadly, the realities of Africa in transition need to be considered and carefully planned to avoid a multitude of challenges. These include not adding to the debt burden of African countries in order to meet climate ambitions; and recognition that as the continent that contributes the least to global emissions, Africa is in a unique position to ask for meaningful financial and technical contributions from the international community.

The benefits of international commitment to climate change were seen during COP26 when it was announced that South Africa would be the recipient of contributions and commitments exceeding \$8 billion, enabling the country to transition from a predominantly coal-based generation sector. The keynote session at Enlit Africa this year will focus on how this money is going to be disbursed, where the spend will be focused and discussing with the parties the agreement the timelines and objectives of the deal.

However, we believe this is just the beginning of a larger conversation around the greater African energy transition and how this will be financed and implemented, and how access to energy is one of the fundamental foundational elements of this transition.

From generation to transmission to distribution, from Cape Town to Cairo, Enlit Africa has something for everyone.

Join us from 7-9 June in Cape Town and be part of the conversation. Share your thoughts on the fair and sustainable energy transition, ensuring access to energy for all.

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- » COVID-19, climate change and the investment landscape – how have things changed and what new finance mechanisms are available?
- » Energy storage: the cornerstone of a successful energy transition?
- » Digitalization set to revolutionize operations
- » Revenue management and protection
- » Self-generation and storage - brought to you in association with the South African Energy Storage Association (SAESA)
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SAB to power breweries through waste-to-energy

THE South African Breweries (SAB) has signed a Power Purchase Agreement (PPA) with a black-woman owned industrial scale biogas waste-to-energy company, Bio2Watt. The renewable energy will be supplied from the Cape Dairy Biogas Plant once it reaches commercial operation.

Construction of Cape Dairy plant, located in Malmesbury is expected to commence in July/August this year and will start feeding approximately 4,8MW into the national grid by second half of 2023, all of which will be taken up by SAB at its various breweries around the country.

Founder and managing director of Bio2Watt, Sean Thomas explained that the PPA with SAB is similar to the successful PPA the company has with BMW South Africa, who have been off-taking approximately

3MW of power for its vehicle building operation at Rosslyn in Pretoria for the past seven years.

In the wake of its success with the first South African biogas project in Bronkhorstspuit, Bio2Watt will build, own and operate its second commercial biogas project in the country. The project is housed in a special purpose vehicle – The Cape Dairy Project (Pty) Ltd.

The Cape Dairy Biogas Project is located on one of SA's biggest dairy farms, Vyvlei Dairy farm owned by Moroster, with its principal business being the supply of milk to the dairy industry from an estimated 7 000 dairy cows permanently residing on the farm. The project makes use of considerable quantities of slurry manure with a mix of other waste streams available within the surrounding region.

The location provides the plant with



Bio2Watt's 4MW plant at Bronkhorstspuit, which supplies the BMW car plant in Rosslyn.

proximity to key fuel supplies, grid access and sufficient grey water from water collection dams.

SAB's holding company Anheuser-Busch InBev's global 2025 sustainability targets

for climate action are that 100% of its purchased electricity will come from renewable sources and carbon emissions will be reduced by 25% across its value chain.

"Under this Power

Purchase Agreement and installed renewable electricity, SAB will achieve 23% contracted renewable electricity" says VP of Procurement and Sustainability in Africa, Conor Ruff.

All of SAB's Breweries in South Africa already use solar power, which we are currently expanding and the Alrode brewery in Johannesburg is also making use of a biogas facility.

Pioneers in the alternative energy field, Bio2Watt have successfully secured a number of firsts for South Africa, including the ground breaking Bronkhorstspuit Biogas Plant which began supplying power in 2015.

A range of other inventive biogas projects are currently in development. These independent commercial enterprises will contribute to diversifying the South African energy mix away from coal, which today still forms over 90% of South Africa's total electricity generation capacity.

Thomas explained that Bio2Watt's 'purely green energy' approach is two-fold: the production of clean energy from a variety of natural sources and the utilisation of what typically goes into landfills in the energy generation processes, thereby assisting in the decrease of water and air pollution.

Sources of green methanol production identified for container fleet



Artist impression: Maersk accelerate s fleet decarbonization with 12 large ocean – going vessels to operate on green methanol from 2024.

TO boost the global production capacity of green methanol, A.P. Moller - Maersk (Maersk) has entered strategic partnerships with six leading companies with the intent of sourcing at least 730 000 tons/year by end of 2025.

The six companies are CIMC ENRIC, European Energy, Green Technology Bank, Orsted, Pro-man, and WasteFuel.

With this production capacity, by the end of 2025 at the latest, Maersk will reach well beyond the green methanol needed for

the first of its 12 green container vessels currently on order.

To transition towards decarbonisation, we need a significant and timely acceleration in the production of green fuels.

Green methanol is the only market-ready and scalable available solution today for shipping. Production must be increased through collaboration across the ecosystem and around the world. That is why these partnerships mark an important milestone to get the transition to green

energy underway.

Once fully developed, these projects of both bio- and e-methanol will enable Maersk to source green methanol at scale across several regions around the globe.

Collaboration and investments in innovative projects are the most important ways to reach a net zero fuel value chain. Maersk will keep on working with a wide-ranging group of leading companies on these and further projects to accelerate the urgent transition to green energy.

Seamless plant switchovers with Zest WEG gensets

AS power outages and loadshedding continue to plague the optimal performance of industrial and mining process plants, Zest WEG is providing standby power solutions that ensure no power loss when these disruptions strike.

According to Damian Schutte, electrical engineering team leader at Zest WEG, many plants face complex and lengthy restart routines if there is a power failure on the main grid and this severely compromises plant efficiencies.

"With our design and manufacturing experience, we can provide genset solutions that can be started up prior to an outage, so that the plant can continue operating seamlessly while switching from utility to standby power, and back again to the utility," says Schutte.

Adding to this, he highlights that Zest WEG's customer-focused approach means that it responds positively to the challenges that companies face in scheduling and implementing these backup systems. In a recent project in the Western Cape, the Zest WEG team provided a plant to a customer in the marine sector with a custom-

ised genset solution to suit its specific needs and also help the customer face unexpected circumstances.

The plant was experiencing considerable downtime due to loadshedding by the national utility, as it would take some time to bring the plant back to operation. The engineered solution includes six 550 kVA generators, two 11 kV transformers, medium-voltage (MV) switchgear, and breakers for synchronising between generators themselves and also with the utility.

"The smaller size of generator provides flexibility and was a cost saving, as some units can be switched off depending on the

site load requirement," he says.

When frequent loadshedding was suddenly announced by the utility, the customer asked Zest WEG for an urgent temporary solution while continuing to implement the project. The team brought three of the gensets on-stream to keep the plant functional until the planned solution was in place.

Bradley van der Spreng, business development consultant at Zest WEG, notes that all major components for power plant solutions such as these can be manufactured and assembled by Zest WEG and Brazil based parent company, WEG. The company can, however, accom-

modate a client's specifications should they refer to a nominated supplier, allowing the gensets to be built for easier on-site installation.

"Our extensive engineering and programming on these systems makes it vital that they are fully tested before being delivered to site," says van der Spreng. "Whatever we specify in the contract can usually be tested in-house at our advanced facility in Cape Town."

Customers are invited to attend the factory acceptance test (FAT), which includes load testing of the generators at different loads up to 110%, synchronisation checks, and MV tests if this is part of the scope.



The 550 kVA gensets in the generator plant room on-site.

Demand for gas boiler cascading systems in SA hots up



By David Poggiolini

THERE has been a marked uptake in the demand for gas cascading boiler systems considering their many inherent advantages. The industry including GPS has already installed more than 80 of these units in the country on behalf of leading property developers and their professional teams, with some of the company's many clients including Zenprop Property Holdings and the pres-

tigious Steyn City development.

Able to supply continuous hot water at temperatures of up to 85°C, the company's unique gas boiler system is suited to hotels; student accommodation; sporting club changerooms; in caravan parks; restaurants and pubs; and manufacturing processes.

Cascade boiler systems connect many gas boilers, enabling them to operate in synchronisation to efficiently adapt to a building's

heat and hot water requirements. GPS' gas boiler system can connect up to five control boards with MSB communication cables. This means that as many as 25 water heaters can operate as a single boiler system. Using multiple units in a cascade system to heat large volumes of water enables a higher turndown ratio, which results in greater system efficiency.

Brandon Hefer, Project manager of GPS, tells Cape Business News that among the

main advantages of the technology is that it provides as much as a 30% saving in energy. "The outlet temperature is pre-set and remains constant – even when the flow varies. This means that the peak flowrate cannot be exceeded. LP Gas or natural gas is only consumed when there is water flow and there is no wasteful energy for bulk storing of hot water," Hefer says.

In addition to a marked saving in energy, the technology emits significantly less

nitrogen oxides and requires minimal maintenance, considering that many units in the system work simultaneously. This means that there is significantly less strain on individual units in a cascading gas boiler system and, thus, able to work efficiently for longer without downtime – even during maintenance periods. GPS' cascading boiler systems carry a four-year warranty. Alternatively, any other hot water system is dependent on a reliable electrical supply.

Certainly, another major selling point for GPS is that the technology has a 70% smaller footprint than other heating systems. Unlike heat pumps that require water-storage tanks, the gas-heating system can be mounted against walls; on roof tops without load-bearing limitations; and in small plant rooms. Space saved in areas can, therefore, be used more optimally by property owners. A case in point is the efficient use of roof space for parking as opposed to photovoltaic modules to power electrical dependent hot water systems.

It is also a more reliable source of heat than solar-based systems, the operation of which is dependent upon adequate ultraviolet radiation levels, while heat pumps use grid electricity, which is also more carbon intensive than LP Gas or natural gas. Both are transition fuels towards a low-carbon economy with as much as a 60% smaller carbon footprint. Another disadvantage of conventional water-heating systems is that a single plant provides an entire building's hot water requirements. If one of the units in GPS' cascading boiler systems are damaged, the others will identify the situation and compensate. It can also be repaired without disrupting supplies of hot water, a significant advantage for property owners.

"Cascading gas boiler systems are also easier to install. This is considering that they are made up of integrated components from the same manufacturer – a significant boon for development projects by saving construction time and costs," De Wet concludes. "The GPS system offers an optional customised telemetry APP for PCs and phones. This allows users to view the temperatures, flowrates and energy consumption of their full cold and hot water supply system."

Drone makes light work of boiler inspection



THE benefits of using advanced drone technology for inspecting boiler internals at a power station were on full display when rope access specialist Skyriders Access Specialists recently undertook a project in the Nkangala district of Mpumalanga.

The Elios SkyEye drone clearly demonstrated not only how accurate and efficient this technology is, but also highlighted its safety aspects, as there is no need to erect expensive and cumbersome scaffolding to gain access to carry out a manual inspection.

"Our drone technology is specifically suited for visual inspection in indoor environments like the large coal-fired boilers and ducting at power stations. Traditional drones cannot use GPS tracking and stability when indoors," explains Skyriders Marketing Manager Mike Zinn. Elios SkyEye, on the other hand, is collision-tolerant for flexible and highly accessible remote visual inspection.

The drone incorporates a full HD camera, a thermal camera, and an onboard LED lighting system with remotely adjustable intensity. This means that an array of onboard tools is available for any lighting conditions. A cutting-edge wireless communications system with a live video feedback means that the drone can be brought into usually inaccessible places up to many hundred metres beyond the line of sight.

The Elios ground station comprises a remote controller, a tablet, and a purpose-designed ground-control application, providing the pilot with

live data and an SD live video stream captured by the drone. All the information and controls are on hand for efficient and safe remote operation. In addition, the drone is dust- and splash-resistant and can operate in environments from 0°C up to 50°C.

"Our boiler inspection work has a huge amount of experience behind it. There are other companies that carry out boiler maintenance, but they lack the seasoned piloting capability of our drone team. Our team is really brilliant in ensuring that the deliverable is clean and stable footage, affording them the necessary time as well to carry out a thorough inspection," highlights Zinn.

"Our drone pilots are just so good at what they do. That fantastic imagery we have access to, and which we then use as the basis of our inspection reports, really sets us up for continued success in this important sector." Another key differentiator for Skyriders is that it has been issued with a Remote Operating Certificate (ROC) from the South African Civil Aviation Authority (SACAA). This means it is certified to deploy its drones outdoors within civil airspace, thereby dramatically extending the scope of its inspection services for clients.

Zinn is confident that the project at this large coal-fired power station will secure additional work for the Elios SkyEye drones. The application of the latest inspection technology is a fitting capstone to Skyriders' long involvement with various power stations.

Gas Boiler Systems

The GPS Hot Boiler System supplies continuous hot water for all multi-story housing, hotels or manufacturing plants. Capable to supply continuous hot water up to 85°C.

There are more than 80 of these Gas hot boiler systems operating successfully in SA.

NO water storage tank required, therefore suitable for rooftops or small plant rooms.

THE MAIN FEATURES

- Outlet temperature is pre-set and remains constant, even when the flow varies
- Peak flow rate cannot be exceeded
- No flow = no gas consumption
- No wasteful pilot lights
- 70% less space than traditional water heating systems
- Low NOx
- Low maintenance

SOME SUITABLE APPLICATIONS

- Hotels/Student accommodation – temperatures set at 60°C
- Sporting Club Change Rooms – temperature set at 42°C or 50°C
- Shower Blocks in Caravan Parks – temperature set at 42°C or 50°C
- Cafes, Restaurants and Pubs – temperatures set at 65°C
- Manufacturing Processes – temperature set at 75°C or 85°C

Each Boiler system control board will connect up to 5 water heaters. Currently GPS can connect up to 5 control boards with MSB communication cables. Therefore, as many as 25 water heaters can now operate as a single Gas Boiler system.

WHAT'S INCLUDED IN THE SYSTEM?

- Heavy Duty continuous flow units
- 32mm foam insulated Copper Manifold
- 20mm foam insulated Branches with
- Isolation Valves to each unit – Hot, Cold and Gas
- Uni-strut wall Mounting Frame
- Staging System as per specification
- 4-year full system warrantee



Hot water systems design done according to the modified Hunters curve used by The American Society of Heating, Refrigerating and Air Conditioning Engineers.



Steinmüller Africa art of SA's energy landscape

By David Poggiolini

Steinmüller Africa is well-positioned to play an even larger role in helping South Africa to strengthen its electricity-generation capacity. The company is the original equipment manufacturer for a significant portion of the boilers that have been installed in the country's coal-fired power station fleet, which generates as much as 38GW of South Africa's electricity requirements. For more than six decades, the company has also been undertaking maintenance activity at the majority of South Africa's coal-fuelled power stations. More recently, the company was also appointed to provide maintenance and repair services for the Arnot, Camden, Duvha, Kriel, Majuba, Hendrina, Kendal and Kusile Power Stations.

"We are confident in the future of the country and that economic activity will gather momentum again, driving demand for our cutting-edge services. We have thus retained our capacity – although downsized according to current market requirements – to provide comprehensive solutions for steam generation. This is at a time when there has been significant disinvestment and de-industrialisation in the country. Our approach demonstrates the confidence that Steinmüller Africa has in the future of the country," Mohamed Khan, Director of Steinmüller Africa, tells Cape Business News.

The urgent need to bring more baseload-generation capacity online and refurbish existing power stations bodes well for Steinmüller Africa. This is in addition to the immense opportunity that presents from independent-power producer projects, including co-generation initiatives by industries, such as mining.

Certainly, being awarded the four-year contract to conduct repair and maintenance at the eight coal-fired power stations is testament to the company's extensive skills and capabilities in all phases of the lifecycle of steam-generation plants. The company competed against several local and international companies to fulfil the stringent requirements of the contract.

A significant portion of these capabilities are housed in Steinmüller Africa's 30 000m² factory in Tshwane,



Gauteng. The facility is the company's flagship operation. It features 35m x 75m-long work bays and lifting capacities of up to 40t, which is also in the process of being upgraded. As Khan notes, the company has always taken a proactive approach to expanding capacity, and this upgrade again points to the company's cautious yet optimistic outlook for the future.

Among the facility's flagship projects was fabricating high pressure boiler parts for both Kusile and Medupi

power stations between 2008 and 2017. As many as 2 700 people were employed at the factory during the manufacture of the vertical walls, coils, headers, connecting tubes, roofs, header supports, as well as circulation and high pressure and LBG pipework systems. Steinmüller Africa's team worked a total of 2-million productive hours a year during this period.

The facility features a PB 850 Special induction bending machine, which is able to achieve accuracies of about

10mm and about 0,5° angles. A semi- and automatic cold-bending computer-numerical control machine provides capacity to undertake 140 000 bends a year at accuracies of 22mm between centres and 0,2° angles. The plant also has a heat-treatment furnace and shot-blast booth.

Notably, Steinmüller Africa is the only company that is able to perform tube to tubesheet explosive welding and explosive tube plugging. Explosive tube plugging is a more spe-

cialised type of explosive welding. It entails inserting a specialised plug in a tubesheet or header-type and then explosively welding it to form a permanent plug for the tube. Steinmüller Africa also offers 24-hour standby services for explosive tube plugging.

Explosive welding presents optimal fabrication, maintenance and repair solutions for high-pressure vessels. With an almost naked-to-the-eye explosive process, this weld occurs at a speed of more than

8 000m/s and forms a permanent bond that delivers a host of benefits in comparison to other welding methods. Steinmüller Africa has offered explosive welding since 2012 and is the only company licenced and qualified to perform this, both on-site or off-site, for customers in the power generation, petrochemical, steel, paper, pulp and sugar and nuclear industries.

Explosive welding is a time-saving and cost-efficient method compared to other types of

welding. This is considering that a combination of metals can be welded together, despite their dissimilarities. Moreover, the detonation is completed within milliseconds, reducing welding time. During the detonation, the oxides between the metal layers are removed, resulting in a weld that has a true metallurgical bond. It also only requires one weld whereas conventional welding requires two. Moreover, the bond does not require post-weld heat treatment. Meanwhile, the welds are unaffected by thermal cycling which is crucial for high-pressure equipment. Explosive welding prevents 99% of leakages, reducing the need for repair and maintenance.

These are complemented by the company's installation skills, experience and capabilities for both brownfield and greenfield projects. Steinmüller Africa owns most of the equipment it uses for construction and maintenance projects. These span cranes, lifting equipment, transformers, generators and welding equipment through to tractors, winches, grinders and trailers.

It is evident that Steinmüller Africa is achieving its vision of consolidating as the supplier of choice in the life cycle management of steam generation and reticulation plant in sub-Saharan Africa.

Steinmüller
africa


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- Plant erection services ▪ Explosive welding

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Ceramic ball valves lower costs and improve longevity in water treatment applications



COMPARED to solenoid valves, ceramic ball valves offer improved longevity and wear resistance, and lower costs; so says Anelia Hough, water treatment consultant at Allmech, a leading South African manufacturer of boilers and supplier of water treatment components. "They're ideal for water-saving systems, industrial automatic control systems, automatic sewage systems, environmental protection projects, water supply and drainage, food and water treatment, and irrigation systems."

Hough says that the proprietary 3-way Runxin valves that Allmech stocks have proven especially useful in water treatment applications.

"Recently, one of our customers installed a filtration plant to treat surface water coming from a nearby river,"

she says. "Water turbidity was the main challenge. Due to the quality of incoming water, the backwash cycle needed cleaned, filtered water. The objective in this application was to ensure the filter media beds were thoroughly cleaned during backwash cycles. During a backwash, the media should be adequately raised and mixed to get rid of contaminants. We installed a single L-shaped 3-way ceramic valve instead of two solenoid valves, switching or diverting the flow direction of the incoming water between raw river water and filtered water. When multiple units need clean water diverted, there is an exponential saving."

In the service position, the 3-way valve allowed raw water from the river to be treated, but once the control valve position was

changed back to start the backwash, the 3-way valve changed position to allow clean water for backwash cycle to enter the valve.

Another Allmech customer operates a dairy manufacturing facility that operates 24/7. Part of the company's operation is its boiler, which provides steam into the facility. A duplex water softener was installed with two softener control valves.

"The Runxin F74 softener control valves have a function to interlock valves in parallel system to have one valve in regeneration, but the other valve is in service," says Hough. "Allmech installed a 3-way valve to change the water flow from standby unit to the service unit within sections. The objective in this application was to ensure soft water would be supplied 24/7 to the boiler. Because the sys-

tem ensured that one valve was regenerating while the other was in service, the customer only required one brine tank, which resulted in further cost savings."

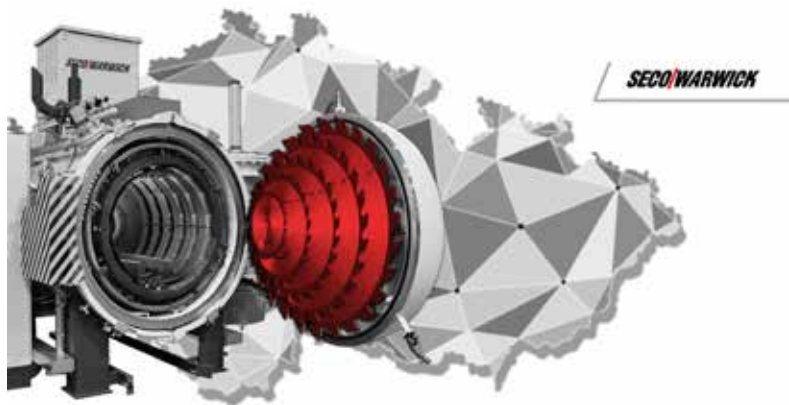
Runxin's ceramic ball valves provides several design features to improve performance compared to ball valves made from traditional materials, the biggest of which is the longevity of the parts. The valves are hermetically-sealed, so they have extremely high resistance to corrosion, abrasion, and chemicals, to stand up to the toughest water treatment challenges. The ball cores and seats are precisely ground in pair to ensure zero leakage. Each of the plastic options comes with a choice of connection between metric female thread and uPVC Glue and some of the valves are available in different grades of steel.

Knife maker orders custom vacuum furnace

A Czech manufacturer of industrial knives, mulching knives and chippers placed an order with SECO/WARWICK for a vacuum furnace with 10-bar high-pressure gas quenching.

The furnace, which has been customized to enable the processing of long and straight items, will be used for tool-steel hardening and tempering. SECO/WARWICK engineers designed a nonstandard workspace measuring 600 x 600 x 1,800 mm. The modification was implemented to fit the characteristic shape of the workpieces.

Apart from the non-standard dimensions of the chamber, the unit



was fitted with a directional cooling option to effectively cool long and thin knives that are prone to distortion during the hardening process.

The Vector vacuum furnace was designed to synchronize its opera-

tion to the dedicated thermal process for knives and chippers.

The application for the device required an inverter that enables complete control over temperature at every stage of the hardening process to reduce dis-

ortion. Together with the additional option of directional cooling and the convection system, the system design helps reduce distortion.

For more information visit: <https://www.secowarwick.com>

New tri-fuel boiler



HURST Boiler has introduced its EGO Series 3-Fuel Boiler which can be fired with any of three different fuels - gas, oil, or electricity.

Designed on the Hurst Euro Series footprint, the EGO Series can produce power either by gas or oil utilizing a burner and/or by electricity using a configuration of resistive electric elements to achieve desired horsepower totals. Multiple combinations of combustible

fuels and electricity and various maximum capacities can also be engineered by Hurst.

The EGO boiler has a significantly smaller footprint and provides more water and steam volume compared to a conventional boiler design. It eliminates downtime on switch-back from electricity to gas operation. This reduces the risk of losing system pressure and maximizes electricity on equal consumption. It can reduce the use of a

stationary engineer to close the redundant boiler or switch to electricity-only operation when you have reduced steam consumption. The Hurst EGO Series boiler is factory packaged to include a Stackmaster Economizer to maximize efficiency and reduce greenhouse gas emissions.

For more information visit: https://www.hurstboiler.com/boilers/scotch_marine/ego-boiler

Boosting boiler systems with Variable Speed Drives

THE boiler room is a great place to uncover opportunities to increase efficiencies and reduce the impact on the environment. Variable Speed Drives (VSDs), also known as Variable Frequency Drives, are an example of support devices that can be applied to boiler feed pump motors, and combustion air blower motors to increase efficiency.

Motor control

The traditional method for energizing 3-phase AC squirrel-cage induction motors has been with a full-voltage motor starter. A control voltage is used to energize the motor stator, which in turn applies higher voltage 3-phase power to the motor. When power is applied, it takes a short period of time to run the motor up to a full synchronous, steady-state, operating speed.

The variable speed drive (or VSD) was introduced as a method of controlling the speed of a motor. The variable frequency power supply uses solid-state components to produce a pulse-width modulated current that varies the power and frequency supplied to the motor. In turn, varies the speed of the motor.

Process control

The Laws of Affinity for centrifugal pumps and fans states:

- Air or water flow is proportional to the (pump or fan) motor speed,
- Air or water pressure is proportional to the square of the (pump or fan) motor speed, and
- Motor power is proportional to the cube of the (pump or fan) motor speed.

Traditional fan applications use a constant speed motor, along with variable inlet vanes or modulating outlet damper to control the pressure or flow of air. Similarly, traditional pump applications use a constant speed motor, along with a modulating control valve to control the pressure or flow of water.

Energy savings

VSDs save energy by enabling electric motors to operate at less than full speed. Reducing motor speed by 25% decreases energy consumption by nearly 60%, while reducing motor speed by 50% decreases energy consumption by nearly 90%.

Process efficiency can be improved when a fan or pump use closed-loop constant-pressure or flow control which can be achieved with feedback from a pressure or flow transmitter. Also, due to the inherent soft-start function of a VSD, motor starting current can be reduced to decrease thermal and mechanical stresses. This will increase the service life of the motor.

Summary

VSDs should be used on fan and pump applications where process load demands are variable, and not steady-state. Using VSDs in fan and pump applications with motors 5 HP and above, will generally have a payback (return on investment) in under five years. As a rule-of-thumb, VSDs should be used on fans or pumps with motors that are 10 HP and above. VSDs can save a substantial amount of energy and can also extend the service life of 3-phase AC squirrel-cage induction motors.

Information supplied by Boiler Supply Company: <https://boisico.com/optimize-your-boiler-system-with-variable-speed-drives/>

SA wine grape harvest passes halfway mark; promising wines underway



AFTER a slow start, harvest time is well underway as more than half of South Africa's 2022 wine grape crop has already been taken in at cellars. The crop is still estimated to be smaller than in 2021, but larger than the five-year average.

"Although we started later than normal with the harvest, all ten wine producing regions have harvested a significant amount of grapes at this stage, which gives a good indication of volumes being delivered to cellars up to now," says Conrad Schutte, manager of Vinpro's viticultural consulting service, which issued the fourth crop estimate with SAWIS (SA Wine Industry Information & Systems). "The grape quality also looks good at this stage, which means that we can expect exceptional wines from the 2022 vintage."

"According to the WineMS information management software, about 65% of the average wine grape harvest that goes through its system annually, has been taken in at cellars – almost a week later than normal," says Christo Spies, WineMS CEO. The coastal regions are close to harvesting their last grapes, while most of the inland re-

gions have passed the halfway mark.

The 2022 season was characterised by cooler weather conditions from winter to mid-December last year, which resulted in later than normal budding, flowering, veraison and ripening. Warm periods in December and January accelerated ripening, but the harvesting programme for most cultivars were still delayed by about seven to ten days.

Although there is variation in the crop estimate per region, the total crop is expected to be smaller, due to the geographical diversity of the respective regions. "The smaller harvest can mainly be attributed to showers in the Northern Cape

and Klein Karoo that resulted in losses due to fungal diseases and rot; sunburn damage due to heat waves in the Swartland, Paarl and Robertson regions, as well as the uprooting of vineyards in certain regions due to financial considerations," Conrad says.

On the other hand, favourable growth conditions, effective fungal disease control and sufficient irrigation water have thus far contributed to a bigger harvest in Stellenbosch and the Cape South Coast.

The final crop estimate by viticulturists and producer cellars will be issued in May 2022, together with the official SA Wine Harvest Report.

How art thou brew?

Darryl Macdougall,
Managing Director,
Verder Pumps
South Africa

THE world has changed at breathtaking speed in almost every sphere of human civilisation since the COVID-19 pandemic began. Where the local alcohol industries, generally, have had a gruelling time over the last two years due to the impacts of the lockdowns, bans and subsequent restrictions on the sale of alcohol locally, reduced export trade volumes and ongoing supply chain disruptions.

However, and while the local brewery market has not been immune to these impacts, it should be noted that local brews still prove to be significantly popular for local consumption and exportation. In fact, market research indicates that the local beer market was valued at 6.65 billion USD (calculated in retail prices) in 2014 – and has been forecast to reach 12.05 billion USD (in retail prices) by 2024, at a CAGR of 5.48% per annum for the period 2019-2024. Interestingly, this forecast takes the impacts of the pandemic into account and yet the forecasted annual growth rate for this period is only slightly decreased when compared to the calculated

growth rate of about 6.97% per year, registered in 2014-2018.

With this positive outlook of future market growth local brewers are turning their attentions to rethinking and restructuring their plans from even 24-months ago, where maintaining business continuity and sustainability in a far more competitive and changed-consumer market has become more the order of the day.

Even prior to the onset of the pandemic and lockdown impacts, the brewery market was becoming increasingly dense and competitive. Over the last several years there has been a growing number of micro and craft or artisanal players entering the market. In turn, this has placed pressure on the industrial or mass producers to keep up with modern and shifting consumer tastes and corporate retail demands – from new flavours, fashions and fads to low and non-alcohol beers and focus being placed on product quality etc. This had led to modern facilities - from artisanal to industrial or mass production facilities - moving from having a dedicated production line for each product to an innovative multi-product line which could be processing several different liquids or flavours every day.



However, the multi-product line approach raises more challenges that every production line manager will invariably face – such as deciding how best to manage the transition from one product to another on the same line. Another potential hazard is cross-contamination, which can lead to spoiled products, shorter shelf-life, production downtime and risks to employees during the cleaning process. Finally, a multi-product line can increase the exposure risk to microbes, which present an ever-looming threat.

So, at the heart of maintaining the highest hygiene standards across multi-product lines lies the careful selection of equipment. Fit-for-purpose hygienic pumping solutions that have been designed and built to eliminate any risk of contaminants during production are necessary for producers who want to stay ahead of the variety trends. For

example, throughout the production process, there are many areas where hygienic pumps with a modular design can be integrated, allowing for streamlined disassembly, cleanability and reassembly.

As the brewery industry seeks to recover financially – and to turn the challenges posed by shifting consumer demand into opportunities – processes must be reliable, repeatable and error-free. Integrating the right equipment is critical to steering through the pandemic upheaval, sustainably. The technical aspects of selecting the right pumping solutions for specific applications can be complex, as well. Brewers, therefore, should look to a trusted and reputable brand that can offer not only a wide range of pumping solutions but solutions that are long-lasting, cost-effective and efficient – because they are 100% fit-for-purpose for the application.

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New technology could make biopsies a thing of the past

By Columbia University School of Engineering and Applied Science

A Columbia Engineering team has developed a technology that could replace conventional

biopsies and histology with real-time imaging within the living body. Described in a new paper published in Nature Biomedical Engineering, MediSCAPE is a high-speed 3D microscope capable of capturing images of

tissue structures that could guide surgeons to navigate tumours and their boundaries without needing to remove tissues and wait for pathology results.

For many medical procedures, particularly cancer surgery

and screening, it is common for doctors to take a biopsy, cutting out small pieces of tissue to be able to take a closer look at them with a microscope. "The way that biopsy samples are processed hasn't changed in 100 years, they are cut out, fixed, embedded, sliced, stained with dyes, positioned on a glass slide, and viewed by a pathologist using a simple microscope. This is why it can take days to hear news back about your diagnosis after a biopsy," says Elizabeth Hillman, professor of biomedical engineering and radiology at Columbia University and senior author of the study.

"The way that biopsy samples are processed hasn't changed in 100 years..."

Hillman's group dreamed of a bold alternative, wondering whether they could capture images of the tissue while it is still within the body. "Such a technology could give a doctor real-time feedback about what type of tissue they are looking at without the long wait," she explains. "This instant answer would let them make informed decisions about how best to cut out a tumour and ensure there is none left behind."

Another major benefit of the approach is that cutting tissue out, just to figure out what it is, is a hard decision for doctors, especially for precious tissues such as the brain, spinal cord, nerves, the eye, and areas of the face. This means that doctors can miss important areas of disease. "Because we can image the living tissue, without cutting it out, we hope that MediSCAPE will make those decisions a thing of the past," says Hillman.

Eager to take this technology to the next level with a larger clinical trial, the team is currently working on commercialization and FDA approval. Hillman adds, "We are just so amazed to see what MediSCAPE reveals every time we use it on a new tissue, and especially that we barely ever even needed to add dyes or stains to see structures that pathologists can recognize."



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Low level of OH&S compliance still a concern

By David Poggiolini

THERE are many industries that have maintained an impeccable track-record in terms of complying with occupational health and safety (OH&S) legislation. The formal mining sector is a sound example of an industry that continues to adopt a proactive approach to ensure healthy and safe workplaces. These efforts are complemented by the stellar work undertaken by large civil-engineering and building contractors in mitigating injuries and fatalities on their worksites and the world-class Safety, Health, Environment & Quality standards adopted by highly regulated industries.

However, at the same time, there are still many sectors of the economy that are not compliant, exposing themselves to potential liabilities and their workers to risk. "This is despite there being more than

200 pieces of OH&S legislation that are about 20 years old. Many employers are, unfortunately, not interpreting the legislation correctly, resulting in poor risk assessments and, therefore, inadequate controls," Louise Woodburn, Risk Solutions General Manager of KBC Health & Safety, says. The company has earned a solid reputation for the quality of its risk assessments and compliance training. This includes the pioneering use of digital technologies, such as augmented reality, virtual sessions, WhatsApp and QR codes. In certain instances, these methods have also proved to be a more cost-effective alternative to physical risk assessments and compliance training. The company deployed these technologies long before the lockdowns were implemented to contain the spread of the Covid-19 virus.

The company also recently expanded its

offering to include risk solutions for smaller companies that cannot afford to employ permanent seasoned health and safety officers to help inform their OH&S protocol.

A case in point is the many fast-food franchises that need guidance on how to reduce their exposure to liabilities and protect their human resources.

KBC Health & Safety provides these services to small, medium and micro businesses on an ad-hoc basis. There is definitely a high demand for them as is demonstrated by the steady growth of the Risk Solutions division since it was launched two years ago. One of the other advantages of this service is that it provides access to OH&S officers who specialise in particular industries. They are, therefore, able to provide a wealth of industry specific knowledge and expertise to help mitigate risk.

However, there are still many smaller com-

panies that are reluctant to invest in ensuring compliance with OH&S. They approach Woodburn's team to assist them implement a robust OH&S strategy after an incident because they were not proactive in mitigating health and safety risks in their workplace. Without adequate controls in place, it is only a matter of time before an incident occurs in the workplace, she warns.

Woodburn refers to the increase in injuries and fatalities in the construction sector of late which she attributes to the growing number of smaller contractors entering the industry. Among other incidences, workers are falling from heights and inhaling noxious chemicals on worksites. This is because these construction companies have not implemented the correct controls to avoid injuries and fatalities. She is also concerned about the state of compliance of many South African factories

where risk mitigation is also mainly reactive as opposed to being proactive. In many instances, these companies are averting incidences by the "skin of their teeth", and it is only matter of time before the lack of adequate controls catches up with them. By that time, it is too late.

The situation is being exacerbated by a lack of proper enforcement by the authorities, due to limited resources that are mainly being deployed to mining and large construction worksites where there is perceived to be a higher level of health and safety risk. "The weakest link remains implementation of the legislation. This undermines the country's comprehensive set of OH&S legislation, believed to be among the best in the world. Many companies are, therefore, able to get away with non-compliance for some time, before an incident occurs that can lead to harm



or even death, while exposing their business to serious liability," Woodburn says.

Worryingly, the health aspect of OH&S is often neglected by many companies. This is considering that the effects of unhealthy workplaces and practices, such as hearing loss, cancers, asthma and mental illnesses, are usually only identified over a longer period than injuries and fatalities. People may have changed

jobs by the time that they realise that their health has suffered due to their previous work experience. "This is a significant challenge. The mining industry has been trying for many years to establish an up-to-date database of health-related incidences. However, maintaining such a database requires deeper collaboration between different companies and across various industries," she concludes.



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At its ISO-accredited manufacturing facilities in Gauteng and Cape Town, covering a total area of over 20 000 m², Kwikspace produces almost 800 units each year. Offered in a standard industry accepted panelised system, or Agrément South Africa and SANAS certified,



Kwikspace's Agrément South Africa and SANAS certified units deliver a minimum life of 20 years.

units deliver a minimum life of 20 years, which is warranted by Kwikspace. Constructed using Chromadeck steel Structural Insulated Panels (SIPs) injected with specialised polyurethane, Kwikspace

units are robust, weather-proof and thermally efficient.

The modular nature of these SIPs enables flexibility and scalability. In a single installation, Kwikspace constructed a 45 000m²

office (all under one roof) for a customer, quickly and cost-effectively.

All Kwikspace units can be customised with logos, brand-specific paint colours, furniture, verandas, handrails,

and more. The customisability of the units lends itself to unlimited creativity; collaborations with interior designers, for example, has yielded trendy, modern and exciting results. This was the case in

a recent project for Msanda Laboratories, which sought to upgrade its Komatipoort border Covid-19 testing stations and purchased two Kwikspace units. Fitted with stylishly colourful furniture, painted interior panels and indoor plants, these new testing stations are comfortable and inviting.

With branches strategically situated across the country, Kwikspace delivers its mobile buildings to clients wherever they are, with minimal disruptions. A commitment to prompt delivery means customers receive purchases 2-6 weeks from order, with rentals delivered within 5 working days from order.

To meet the growing demand for modular building solutions both locally and beyond our borders, Kwikspace has launched the Kwik Kit – a prefabricated unit

delivered in component form, together with detailed construction drawings that enable the user to carry out unit assembly.

"Kwikspace has a proud legacy of product excellence, exceptional customer service and innovative solutions. This is made possible through commitment of our incredible personnel, who share our vision for smart space solutions. We look forward to another 50 years as Africa's leader in alternative building technology," comments Dirk Steinberg, CEO and Financial Director.

Visit the Kwikspace website for more information (<https://www.kwikspace.co.za>) or follow them on LinkedIn (<https://www.linkedin.com/company/kwikspacemodular-buildings/>)

Programme instills safety behaviour for all employees



Epiroc launches SafeStart Programme with fun events.

EPIROC Southern Africa, which includes South Africa, Botswana, Mozambique, Namibia and Zimbabwe, has joined the list of Epiroc entities around the world in collaborating with SafeStart International, a global organisation that leads the way in human error reduction techniques training, injury reduction up to the average of 50%, and 24/7 safety behaviour ownership by providing these safety concept interventions for companies worldwide. The programmes involve practical techniques that can be applied to keep workers alert to hazards and risks all day, every day. The objective is to create a safe environment at work, at home, on the road and in the

community.

"SafeStart addresses not only our own safety but also, importantly, the safety of everyone around us," explains Johnny de Mesquita, Epiroc Regional SHEQ Manager for Southern Africa. "We are extremely excited about this collaboration, especially because this is a behavioural based programme that addresses safety from a totally different perspective. It considers people's state of mind living in modern society, both in the workplace or on the road as well as in the home and community environment."

The SafeStart Programme was launched to Epiroc employees at the Jet Park head office in November 2021. So much goes on

every minute of every day and add to this the protracted Covid-19 pandemic and all its trappings which give us even more to have to think about. This constant bombardment and information overload just all becomes too much and we stop focusing on what is important – life or personal safety care / attitude... After all we are all responsible for our own lives. And this is when accidents happen usually compromised by own critical errors and/or decisions on the spot. It can cost us our lives or the lives of others. A lot of it, like texting, is learnt behaviour so logic dictates that doing things in a better and safer way can also be learnt. And this is where SafeStart, as a

behavioural based system, is a perfect fit.

The programme comprises of five units which will be rolled out to all Epiroc offices, branches and mine sites in South Africa and the relevant Region Countries.

Unit # 1, which kicked off in November 2021, is expected to be completed around May/June 2022 for the entire Southern African Region, and will be followed by training of the remaining four units. It takes approximately three to four weeks to complete and apply the concepts learned for each of the five units to give employees ample time to get used to the principles and to practice them in the working and/or leisure environment before moving on to the next unit.

Hearing loss is a neglected hazard for miners

IN 2020 alone, despite COVID-19, mining contributed R361.6 billion to South Africa's gross domestic product, a share of over 8%. The industry employs 451 000 people.

But despite its value and the regulations in place to protect workers, it has been criticised for a poor record of health and safety.

The South African constitution guarantees workers' right to an environment that is not harmful to their health or wellbeing. Employers must provide a reasonably practicable working environment that is safe and without risk to the health of employees.

The country's miners face a number of hazards including occupational noise-induced hearing loss.

Hearing conservation programmes were introduced nationwide in 2003 by the Mine Health and Safety Council, an organisation comprising labour, the state and employers. But in 2013 the industry conceded that these were not having the desired impact of reducing the new cases of occupational noise induced hearing loss.

As a response to this admission, we conducted a study to understand how these programmes were being implemented in the industry and to identify areas for improvement.

We found a number of gaps in these programmes. There were no clearly defined action plans. We also found

flaws in the formulation of hearing conservation programmes. Intervention programmes need to include occupational audiologists. Furthermore, the mining industry needs to be accessible for research purposes.

Noise-induced hearing loss

The Leon Commission in 1995 was the first inquiry into occupational health and safety in South Africa's mining industry for more than 30 years. Eventually, in 2003, hearing conservation programmes were rolled out throughout the industry.

The programmes targeted two key areas. The first stated no employee's hearing should deteriorate by more than 10% from the baseline by December 2008. The second was to ensure that, by December 2013, the total noise emitted by all equipment would not be higher than a sound pressure level of 110 dB(A).

Hearing conservation programmes are complex and need an integrated approach. These programmes require a range of actions to be taken. For example employers must monitor the workers' noise exposure levels. And employees' hearing must be monitored over time.

Occupational noise-induced hearing loss is not life-threatening. But it has long-lasting health, psychosocial and economic effects.

Our research investigated the management

of occupational noise-induced hearing loss in the South African mining industry from policy formulation to implementation, monitoring and evaluation. We interviewed members of the Mine Health and Safety Council and analysed regulations and policies on the management of occupational noise-induced hearing loss since 1994.

There was a lack of comprehensive studies addressing all the pillars of hearing conservation programmes. Some stakeholders were excluded from the formulation and implementation of these programmes. We also identified gaps in the role of occupational audiologists in the mining sector.

In addition, we faced restrictions when trying to gain access to the mining industry for research purposes. At the core of the problem was the fact that hearing conservation programmes are complex interventions. They have multiple pillars. These include periodic noise exposure measurement and monitoring, engineering controls as well as personal hearing protection. Hearing conservation programmes are also influenced by the behaviour of various actors such as mine management and mineworkers. Additionally, there are few studies focusing on understanding the processes followed in the implementation of hearing conservation programmes.

Scientists find microplastics in blood for first time

MICROPLASTICS had already been spotted in oceans, air and food—now researchers have found it in human blood.

Scientists have discovered microplastics in human blood for the first time, warning that the ubiquitous particles could also be making their way into organs.

The tiny pieces of mostly invisible plastic have already been found almost everywhere else on Earth, from the deepest oceans to the highest mountains as well as in the air, soil and food chain.

A Dutch study published in the *Environment International* journal recently examined blood samples from 22 anonymous, healthy volunteers and found microplastics in nearly 80 percent of them.

Half of the blood samples showed traces of PET plastic, widely used to make drink bottles, while more than a third had polystyrene, used for disposable food containers and many other products.

“This is the first time we have actually been able to detect and quantify” such microplastics in human blood, said Dick Vethaak, an ecotoxicologist at Vrije Universiteit Amsterdam.

“This is proof that we have plastics in our body—and we shouldn’t,” he told AFP, calling for further research to investigate how it could be impacting health.

“Where is it going in your body? Can it be eliminated? Excreted? Or is it retained in certain organs, accumulating maybe, or is it even able to pass the blood-brain barrier?”

The study said the microplastics could have entered the body by many routes: via air, water or food, but also in prod-



Microplastics had already been spotted in oceans, air and food—now researchers have found it in human blood.

ucts such as particular toothpastes, lip glosses and tattoo ink.

“It is scientifically plausible that plastic particles may be transported to organs via the bloodstream,” the study added.

Vethaak also said there could be other kinds of microplastics in blood his study did not pick up—for example, it could not detect particles larger than the diameter of the needle used to take the sample.

The study was funded by the Netherlands Organization for Health Research and Development as well as Common Seas, a UK-based group aimed at reducing plastic pollution.

Alice Horton, anthropogenic contaminants scientist at Britain’s National Oceanography Center, said the study

“unequivocally” proved there were microplastics in blood.

“This study contributes to the evidence that plastic particles have not just pervaded throughout the environment, but are pervading our bodies too,” she told the Science Media Center.

Fay Couceiro, reader in biogeochemistry and environmental pollution at the University of Portsmouth, said that despite the small sample size and lack of data on the exposure level of participants, she felt the study was “robust and will stand up to scrutiny”.

She also called for further research.

“After all blood links all the organs of our body and if plastic is there, it could be anywhere in us.”

A new model to automatically detect and filter spam emails

By Ingrid Fadelli, Tech Xplore

SPAM emails are undesired messages that are often sent to many random users in bulks. These messages can contain advertisements, but also phishing links or malware. The automatic filtering of emails and the identification of spam messages is highly advantageous, as it can reduce the risk of phishing attacks and make it easier for users to navigate their accounts.

Over the past few years, computer scientists have developed increasingly advanced computational models to automatically detect spam emails. To perform well, however, most of these models need to be trained on large email datasets, which were manually labelled by humans.

Researchers at Sinhgad Institute of Technology Lonavala in India have recently created a new technique for the automatic detection of spam emails. This technique, presented in a paper published in the *International Journal of Intelligent Robotics and Applications*, could help to improve the security of users, while also helping them to skim irrelevant or undesired emails.

“Our model also reduces training speeds and leads to greater efficiency of classification,” Vikas Samarthrao Kadam, one of the researchers who carried out the study, told TechXplore. “In contrast with other models, it increases the convergence rate of the spam email detection, achieving better results.”

The model developed by Kadam and his colleagues is based on multi-objective feature selection and on an adaptive capsule network, a new and highly

promising deep learning technique. In contrast with other previously developed methods, the model was trained on both image and text datasets.

“Our model introduces a new hybrid heuristic algorithm and achieves optimal feature selection, with multi-objective function,” Kadam explained. “Our work confirms the promise of new and improved detection models based on deep learning algorithms. The automatic detection of spam emails is necessary due to its simplicity.”

“Spam detection is essential since it can ensure justice for the sellers and retain the trust of the buyer on the online stores...”

The model developed by the researchers is easy to implement and can be trained quickly, over short periods of time. In initial evaluations, Kadam and his colleagues found that it can detect spam emails with greater accuracy than other existing methods.

“Spam detection is essential since it can ensure justice for the sellers and retain the trust of the buyer on the online stores,” Kadam said. “In contrast with other methods, it improves the training speed and efficiency of classification. Our model could improve with the quality of life for people who receive large amounts of emails, allowing them to browse through their email smoothly and

only use their accounts for their desired purpose.”

In the future, the spam filtering technique created by Kadam and his colleagues could be implemented on a large-scale, improving the security and efficiency of email services. Remarkably, the model can be applied to a wide range of existing services, including Gmail, Yahoo mail and Outlook.

“Almost all researchers present their results based on the accuracy, precision and recall, of their models, but we feel that the time complexity of machine learning models should also be considered as an evaluation metric,” Kadam said. “Some researchers show promising results in the process of feature extraction using a bag of words, as they claim that the email header is as important for spam detection as the content of the body. So, deep feature extraction of the header line could also be considered in the future.”

So far, the new spam filtering technique devised by this research team achieved very promising results, as it could effectively detect spam emails with a high accuracy. However, Kadam and his colleagues feel that its speed and precision could be improved further in the future.

“The security of spam detection and filtration systems is crucial to achieve better accuracy and reliable results, which can be improved in the future using ensemble learning,” Kadam added. “The false positive rate of many models is still higher than required, but it should be reduced to the smallest possible value in future. Real-time spam classification is much needed, as most of the proposed models do not work well with real-time data.”

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Slip-slip-sliding away

THERE I am in the local Pub & Grill, minding my own business and contemplating how the first sip always tastes so much better than any of its successors, no matter how long you try and duplicate it. But, of course, this is a work in progress. The bay is blue, the sun is warm and the beer is cold. The world is whistling its way through space, but, as will happen, in walks Luke the Dude.

Now, I don't mind Luke that much, in fact, I mostly like him. But he has the very bad habit of disturbing perfectly peaceful company with unnecessary talk of crooks and confidence tricksters. The pub's Governor does not like such rudeness and indeed, we hardly mention our government.

Our sweet bartender knows politics are taboo, so she just bends over the counter, which keeps most customers happy, and pours another round, which keeps The Governor happy. And with everyone thus relaxed, you never know it's coming, not with Luke the Dude. He slips it into the conversation in his sly way.

"So," says Luke to nobody in particular, "what are you ladies and gentlemen doing here? Don't you have work to do?" We, the gentlefolk in question, look at the TV screen to reassure ourselves that it is indeed approaching rugby time on a Saturday afternoon, as Jon the Joker takes the bait: "Useless! You still don't know your ANC from your elbow, Luke. Do you know what day it is?"

"Please," says Luke to the bartender, "do you have a calendar for Jon? He wants to know what day it is."

"Now," Luke pressed forth, "as I've been saying before the rude interruption, "the unemployment crisis is the worst threat we face as a young and occasionally promising country. And as for our government, they

continue making it worse."

You see what I mean?

Not everybody agrees and there you have it.

"No ways," says Bill the Beard, a well-known intellectual and electrician, "it's education! That's the pits! Did you see what questions they have to answer to pass the matric exams? We have youngsters entering the jobs market who cannot manage simple calculations or writing."

"I fully agree," says Miss Lily, "and the education minister is a highly paid failure."

"Mmmm," says Bob the Book, who tries to outguess the markets in his spare time, "I'll buy more Curro shares on Monday."

"No, no, you are too materialistic," says Irene the Queen, "our biggest problem is poverty. Children are literally dying of hunger."

"All very true," says The Prof, "and all very sad. These disasters are home-made – indigenous ineptitude. Grand theft and corruption, incompetents in high office, race discrimination and vast overstaffing in the civil service. Avarice and incompetence rule. Our economy is being depleted and mismanaged into bankruptcy. We are sliding towards the fiscal cliff."

Then everybody speaks at once and our bartender gives me her helpless look. Thus encouraged to chivalry, I bang on the counter and shout: "Order!" Everybody does. The bartender pours another round and the shouting is replaced by mutterings of, "Make mine a double, for Pete's sake. He's paying."

So I say, "Please explain, Prof? Just keep it simple." What else could I say?

"Fiscal cliff?" replied The Prof, "Well, the government's budget has two sources of funding, taxes and borrowing. Interest on borrowings has to be paid from taxes or more borrowing. Our problem is that our

base of taxpayers is very narrow: too few taxpayers. Economic growth – more profitable enterprises and taxpaying jobs – does not keep up with population growth. Our bad education system and government interference in the private sector make matters worse. Our employment rate is worse than it has ever been. More and more people are living on government grants. Covid was a disaster, softened somewhat by taxes from a commodities boom.

"The fiscal cliff is reached when all government revenue is used for paying social grants, civil servants and debt servicing. Of course, industrial-scale theft and corruption, state capture if you like, make matters much, much worse. Nothing is left for investment and maintenance."

"Dr Anthea Jeffery of the Institute for Race Relations describes it expertly in a Daily Friend article: Spending on these three income gobblers was roughly 55% of tax revenue by February 2020 – expected to reach 100% in that first Covid year. The tax windfall from rising commodity prices saved us from going over the cliff."

"Still, estimates in this year's budget put spending on social grants, debt servicing and public servants at 75% of tax revenues."

"Well!" exuberated Big Ben, "that's good news then! 75% is a good distance from the 100% feared for 2020, the ANC is doing a good job!"

The Prof smiled. "The commodities boom did help," said he, "but a ball rolling downhill picks up speed. As less revenue is available for infrastructure and investment – the stuff economic growth is made of – unemployment rises and more people need social grants. That scenario is not sustainable."

"As I recall," offered Stevie the Poet, "the latest Budget Review did have something to say about that?"

OPINION

ON THE CONTRARY

The columnist is a journalist and editor based in Onrusrivier. His awards for journalistic excellence include the Mond and the Sanlam Awards.

Pieter Schoombee



"Indeed," confirmed The Prof, "the National Treasury is determined that permanent additions to social support must be balanced by new taxes or spending cuts."

"A ha!" jubilated Big Ben. "Thought so. Our government has the nettle by the horns!"

That, at the very least, reduced the wall-to-wall frowns. "Useless!" laughed Jon the Joker, "don't you mean, grab the bull by the thorns?"

"Quite so," chortled The Prof. "But our government is full of surprises. This time the minister of social development, Lindiwe Zulu, is sneaking in powers to overrule the minister of finance and his budget. I kid you not. As Dr Jeffery warns – never mind the Budget, Zulu will determine the grants' 'value and duration' as she pleases."

"We know the risk. We can take it or we can take a stand. Please excuse me, I have work to do." With that The Prof left.

You can read Anthea Jeffery's article here: <https://dailyfriend.co.za/2022/03/10/smuggling-in-a-permanent-income-support-grant-via-the-back-door/>

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Great Barrier Reef suffers 'widespread' bleaching event

By Andrew Leeson

THE Great Barrier Reef has again been hit with "widespread" bleaching, as higher-than-average ocean temperatures off Australia's northeast threaten the already struggling World Heritage site.

Surveillance flights over the reef revealed damage due to heat stress ranging from minor to severe bleaching across the 2 300 km network of corals, the Great Barrier Reef Marine Park Authority said.

"Bleaching has been detected across the Marine Park—it is widespread but variable, across multiple regions, ranging in impact from minor to severe," the authority said in its weekly update.

Over the past week sea temperatures throughout the marine park ranged between 0.5 and two degrees Celsius above average, while the far north and inshore areas recorded temperatures between two and four degrees above average.

"The most heavily impacted reefs are around the Townsville region. There have also been reports of early mortality where heat stress has been the greatest."

The news comes ahead of a UNESCO trip to the reef to inspect the site's health, informing a decision on its heritage listing which is to be considered in June.

Bleaching occurs when healthy corals



become stressed by spikes in ocean temperatures, causing them to expel algae living in their tissues, draining them of their vibrant colours.

There have been five mass bleaching events across the Great Barrier Reef triggered by unusually warm sea temperatures since 1997, leaving many affected corals struggling to survive.

Several cyclones have also battered the reef, as climate change drives more extreme weather.

Outbreaks of crown-of-thorns starfish

have also eaten away at the coral.

While recent changes are not yet classified as a mass bleaching event, the Australian Marine Conservation Society described the report as "disastrous news", particularly during a La Nina weather pattern, which is usually associated with cooler ocean temperatures.

"It shows the consistent pressure our reef is now under from global heating," the society's campaign manager Lissa Schindler said.

"A healthy reef can recover from coral

bleaching but it needs time. More frequent marine heatwaves primarily driven by the burning of coal and gas means it is not getting this time."

Australia's conservative government earlier this year announced new funding in the hope of preventing the climate-ravaged reef from being removed from UNESCO's World Heritage list.

When the UN previously threatened to downgrade the reef's World Heritage listing in 2015, Australia created a "Reef 2050" plan and poured billions of dollars into protection.

The measures are believed to have arrested the pace of decline, but much of the world's largest reef system has already been damaged.

A recent study found bleaching had affected 98 percent of the reef since 1998, leaving just a fraction untouched.

The Great Barrier Reef—the world's largest living structure, visible from space—was added to the list in 1981 for its "superlative natural beauty" and extensive biodiversity.

But the list is not permanently fixed, and sites can be downgraded or even removed entirely on the UN body's recommendation.

While placement on the "in-danger" list is not considered a sanction—some nations have their sites added to gain international attention to help save them—others see it as a dishonour.