

# CAPE Business News



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## Agriculture hits the headlines

*But does the rhetoric stand up to scrutiny?*

*Editor's comments in italics.*

**T**HE past six weeks have seen a flurry of announcements regarding the future of agriculture in the country, with a further development expected next month from the USA Consulate on export partnerships.

The first was the announcement during May of the unveiling of a 'New Agriculture Agro-processing Masterplan to transform the sector' from Thoko Didiza the Minister of Agriculture, Land Reform and Rural Development, who said upon signing: "...[it] will allow government to reimagine a sector that South Africa wants – one that is both globally competitive and inclusive."

*The Masterplan announcement however, was a little light on detail although contained the usual hackneyed platitudes such as 'social compacts' and the role of financial institutions and government's 'achievements' to date which said Didiza " .the department has transferred R400 million of the committed R1 billion grant to the Agri-Industrial Fund as per Memorandum of Agreement (MOA) with the Industrial Development Cooperation (IDC).*

"In our first year, the facility has funded nine projects to the value of R384 million.

"All of these projects are black owned and operated and four of these are women owned.

This facilitated 229 new jobs. *(That means each job cost the taxpayer more than R1,676-million to create!)*

"There are currently 31 transactions in the pipeline requiring R2.2 billion, of which R623 million is grant funding.

"It is envisaged that 1 371 new permanent jobs will be created through these initiatives. *(Each job cost R1,45-million to create. Readers can draw their own conclusions regarding value for money.)*

### Africa Agricultural Strategy for the Western Cape

*The statement reads:* On Friday, 27 May 2022, the Western Cape Department of Agriculture launched its Africa Agricultural Strategy for the Western Cape.

Western Cape Minister of Agriculture Dr Ivan Meyer said that the strategy focuses on co-creation within economic development, job creation, and food security.

Meyer: "The African market offered great trade opportunities and was essential to



*Picture credit: African Business Communities.*

South Africa and the rest of the world. We aim to unlock agricultural opportunities in Africa and the Western Cape Agricultural Sector, including agricultural trade products, inputs, services, technology partnerships, information, skills development, training and logistics."

Meyer continues: "Africa is the third-largest market of the Western Cape's primary agricultural exports, accounting for R4.3 billion in 2021. The African market imports share of 41% for agricultural exports comes from South Africa. Globally it accounts for 2.9% of global imports and contributes 2.8% to the world economy. Furthermore, during 2012-2017, the average annual GDP growth increased by 4.3%, the second fastest-growing economy after Asia at 4.5%."

Siobhan Thompson of Wines of South Africa commented: "South Africa's wine exports to other African countries increased from about 15,5 million litres in 2020 to 23,4 million litres in 2021. For example, between 2020 and 2021, volumes traded with Nigeria increased from 1,9 million to 6,6 million litres, while Kenya's volumes increased from 3,5 million to 4,8 million litres, and Tanzania's from 2,2 million to 3,4 million litres."

CEO of Agri-Western Cape, Jannie Strudom, says that his organisation is committed to supporting the WCDoA's African Strategy.

*Again, plenty of Government speak but no cast iron details.*

### Agri SA partners with Motsepe Foundation to drive commercial partnerships

*The third announcement had a little more meat on the bone and described AGRI SA's launching of two pioneering projects in Limpopo and Mpumalanga to boost the sector's transformation efforts. It reads:*

"The projects are the culmination of a joint initiative with the Motsepe Foundation to reimagine development funding and foster greater collaboration to accelerate the inclusivity of the agricultural sector.

The Motsepe Foundation and Agri SA, through its subsidiary Agri Enterprises, have identified access to capital as a key constraint facing projects with real potential to support and advance emerging farmers.

Due to legal and tax requirements and because of the commercial nature of these projects, the Motsepe Foundation facilitated approximately R70-million of funding for the first two projects through a company established by the Motsepe family.

*The Agri SA statement says that this initiative will create 1 541 new jobs at a cost of R45 425 per job - substantially less than those "created by Government" which only emphasises the well-trodden path that Government's job isn't to create jobs and when it tries, well, the numbers don't lie. The Government's route to job creation is more than 30 times more expensive than if left to the private sector. The full Agri SA statement can be found in this issue on p20.*

## Customised design wins Angolan crane order



*Typical overhead cranes (not the actual crane for Consulmet) under manufacture at Condra's Johannesburg factory.*

**A**N order for an overhead crane and gantry specifically designed to overcome delivery and functionality constraints for a mine in Angola, has been placed by Consulmet Pty Ltd on crane and hoist manufacturer Condra. Manufacture began in April.

A customised proposal for a product designed and manufactured in South Africa won through against tenders submitted by several rival firms headquartered abroad.

There were two challenges. First, the mine needed to be able to position the crane over three milling and screening areas which will be constructed in phases and serviced by multiple conveyors on either side. Second, the nature of access roads to the site dictated that the 28-metre-span crane be disassembled into 12-metre containers.

Unsuccessful tenders put forward a variety of designs based on portal crane configurations limited to the first mill only. These would have been unable to service future units because of conveyors interrupting the portal rail route.

By contrast, Condra's solution proposed a double-girder overhead crane running along an extendable crane gantry erected initially over just the first milling area. The gantry's legs

**Continued on P13**



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## Will SA's version of the "Great Resignation" stimulate small businesses?

A global upsurge in voluntary resignations amid the COVID-19 pandemic – otherwise known as the "Great Resignation" – witnessed almost 50 million Americans quit their jobs in 2021 alone. Another trend, however, has been developing in tandem with these mass resignations – a boom in the number of people starting new small businesses, with new business being formed increasing by 53% in 2021, when compared to the same period in 2019. These emerging trends have led some experts to conclude that the flipside of the "Great Resignation" is a small business boom.

Whether South Africa will follow suit is dependent on a number of factors that are unique to the country's socio-economic climate. This is according to Jeremy Lang, Executive Director at Business Partners Limited, who says that to understand how South Africa differs as a case study, we need to take a closer look at the reasons behind the mass resignation.

He says that numerous workplace studies have indicated that South Africans were compelled to work longer hours during lockdown, resulting in burnout becoming an unfortunate reality for many. Furthermore, remote working has opened the world's borders to South Africans, who now have more options to work remotely for offshore companies.

"In South Africa, where the socio-economic climate is characterised by record-high unemployment," explains Lang. "The status quo is very different to other regions such as the United States. The 'Great Resignation' in America is arguably a white-collar phenomenon. In South Africa however, where the majority of the unemployed are blue collar workers, South Africans simply do not have the luxury of quitting their jobs and relying on the state."

These realities therefore beg the question: will South Africa experience a small business

boom as an after-effect of the pandemic and the subsequent "Great Resignation?"

"The answer is both yes and no," says Lang.

"It is yes, in the sense that remote working culture has given rise to a new generation of digital nomads – individuals who choose to spend their time working remotely, from different geographical locations."

This trend is most apparent among Gen Zs and Millennials, who frown upon office-bound working environments and are doing much to resist the nine-to-five mentality, which may not be the most practical solution to obtaining a work/life balance. These digital nomads may work as freelancers, consultants and workers in the emerging gig economy. As such, they may very well be the new generation of small business owners.

"The answer is also, no," adds Lang, "in the sense that much work needs to be done in the way of refining the process that aspiring entrepreneurs must abide by



Jeremy Lang.

in order to start their own businesses. On a positive note, the President's establishment of a red tape committee to decrease the bureaucracy that exists within the SME space, hope is on the horizon."

However, as the latest findings from the Business Partners Limited's Q4 2021 SME Index indicate, cash flow problems and limited access to funding remain two of the biggest challenges that face small and

medium-sized enterprise (SME) owners. Unless these challenges improve, there will be little to no impetus for the rise in small business opportunities.

"As the Q4 2021 SME Index reveals," Lang concludes, "confidence levels are returning to their pre-COVID levels, which is indeed a good sign and may very well be a welcomed precursor to an upsurge in new and innovative small businesses."

## Bank reduces its reliance on diesel-powered generators

FNB is reducing its reliance on diesel-powered generators as backup power during loadshedding in efforts to lessen its carbon footprint in its branches. It has replaced the need for diesel-powered generators in over 200 branches, with approximately another 200 branches set to be equipped with lithium-ion and UPS solutions within the

next year to ensure an uninterrupted power supply.

FNB say that it has consistently implemented energy efficiency measures in its branches, including the installation of LED lighting. Its branches are also equipped with Metering online technology, which allows for central monitoring of electricity consumption through a Web-based platform. During

working hours, all air conditioning units in branches are set to 22 degrees Celsius to save electricity.

FNB recently revealed plans to continuously modernise its branches, with a strong emphasis on digitisation, improved client service, and optimal cash solutions for customers. It is optimising space and design, with future branches averaging 350m<sup>2</sup> rather than

the current 460m<sup>2</sup>.

FNB built nine new branches in local markets or communities and refurbished 53 branches in the current financial year, with another three new branches under construction and another 34 refurbishments in the works. In the financial year 2023, FNB intends to open 27 new community branches and renovate approximately 90 others.



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# Council fails to act on eyesore



The eyesore on Stadler Road.



The view from the eyesore.

The editor asks why?

PICTURED above is an unfinished project in Stadler Road, Bloubergstrand, that started life as either luxury apartments/and or an upmarket guest-house.

This development has been dogged by controversy ever since the first sod was turned, which was more than 18 years ago

and it has stood unfinished since that time.

The editor approached the City's Transport; Spatial Planning and Environment Department to understand why nothing has been done and was frankly given the run around, initially them taking more than three months to respond to an interview request and then saying that they were

not pursuing the matter; actually it was me that pursuing the matter!

Hearsay from the local community confirms the Council's inactivity and apparently the local rate-payers association attempted to take legal action to either have the property condemned or for it to be completed, but backed off due to the costs

involved in litigation.

It would appear from conversations with local residents and estate agents operating in the area that the property is owned by the wife of a property developer, Mr Saleem Hassen who could not be contacted for comment.

The partial collapse of Biccard Street, immediately behind Stadler Road was

caused by failure to adhere to the approved building plans, as was the level of the property's parking basement being below that of the sea's high water mark are issues raised by residents.

Even when vagrants began occupying the building some years ago and threatening security in the area, the City did nothing and it was left to a local

“Even when vagrants began occupying the building some years ago and threatening security in the area, the City did nothing...”

builder/developer to brick up apertures and secure the building, at his own expense.

And so it has remained an eyesore with one of the most iconic sea views in the City, littered with

estate agent's, For Sale boards, in the hope that somebody will cough up the owners reported asking price of R80-million.

Why has the Council failed to address this situation?

## Chartered Accountant intake drops by 24%

THERE is a vast undersupply of CAs in the market, and the bad news is its only going to get worse. The number of finance graduates writing the initial test of competency (ITC) exam has dropped significantly in 2022. The ITC is the first of two board exams that need to be passed in order to qualify as a Chartered Accountant (SA).

According to figures released by the South African Institute of Chartered Accountants (SAICA), 2 946 candidates wrote the exam in 2022, compared to 3 887 in 2021. This represents a drop of 24%!

“The view from the coal face of CA employment in South Africa is concerning,” says Graeme Marais, director of specialist finance recruitment company Blue Recruiting. “This year's ITC intake fell by around a

quarter, which means the system will be producing fewer chartered accountants in three or four years' time. In an environment where unemployment is rife, and with the world begging for more CAs, our hope would be for the number of CAs to grow at that rate and not reduce, while keeping the high standards that currently exist.

“The fact that the potential number of CAs who will graduate in 2025 in South Africa has dropped by such a large number is a worry for me and should be for the entire market.”

Marais says this is compounded by the ‘brain drain’ of qualified South African professionals leaving the country to work, particularly in the United Kingdom and the Netherlands. This is not to say that our CAs are necessarily leaving, though.

“The world, suffering from the Great Resignation, is now waking up to the fact that our brilliant South African CAs can fill vacated jobs at a fraction of the price, while they remain in South Africa. A large number of CA's (SA) are already being employed to work remotely.”

Before 2022, the number of ITC candidates was on the rise, growing by 19% in 2020, then by 6% in 2021,” says Marais.

Professor Nico van der Merwe, outgoing CA programme coordinator at North-West University, says the drop could be as a result of the Covid-19 pandemic, as well as poor matric maths results.

“In my opinion, the main reason for the drop in numbers was the impact of emergency remote teaching and learning (ERT),”

he says. “The drop in numbers is nothing the universities could have avoided.

“SAICA is maintaining a high standard of qualification and has not dropped the standard of the ITC or changed the competency framework. There were simply fewer students that could complete the CA university qualification successfully in an ERT environment, despite our best efforts as a university.

“We have also seen a steady drop in students qualifying to study CA with the poorer grade 12 mathematics marks the country has seen over some time. Intakes are generally down and this has now spilled over to postgraduate level” he concluded.

For more information on Blue Recruiting, visit [www.blurecruiting.co.za](http://www.blurecruiting.co.za).



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# Electra Mining Africa, celebrating 50 years this year

ELECTRA Mining Africa and its line-up of conferences and free-to-attend seminars will be taking place from 5-9 September at the Expo Centre, Nasrec, in Johannesburg. Hundreds of exhibitors are ready to showcase their latest innovations, technology, products and services at Southern Africa's biggest mining, electrical, automation, manufacturing, power and transport trade exhibition.

It's an exhibition viewed by industry as one of the most important events on the calendar.

This year, Specialised Exhibitions, organisers of the show, are promising an exciting interactive event with many activities planned by exhibitors and industry partners, and to also celebrate the show's 50<sup>th</sup> anniversary.

In an effort to promote the importance of Forklift Operation and operators in the Supply Chain & Logistics industry, Lifting Africa and LEEASA (Lifting Equipment Engineering Association of SA)

will be hosting a Forklift Driver competition during Electra Mining Africa.

As in previous years, many respected Associations and industry organisations will be partnering with Electra Mining Africa. Charlene Hefer, Portfolio Director at Specialised Exhibitions, has confirmed that the Southern African Institute of Mining and Metallurgy (SAIMM), Society for Automation Instrumentation Mechatronics and Control (SAIMC), South African Capital Equipment Export Council (SACEEC), Mining Equipment Manufacturers of South Africa (MEMSA), South African Mineral Processing Equipment Cluster (SAMPEC), the SA Institution of Mechanical Engineering (SAIMEchE), Women in Mining South Africa (WIMSA) and LEEASA are on board as partners.

Electra Mining Africa and co-located shows Elenex Africa, Powerex, Transport Expo and Automation Expo will be supported

by a programme of content-rich conferences including SAIMC, WiMSA Women in Mining Workshop and LEEASA Lifting Equipment Conference and SAIMEchE free-to-attend seminars. Industry experts will be speaking on a range of topical and important issues. The seminars will be live-streamed to enable a wider audience to participate in the learning experience.

The 'every day a theme day' experience will again be part of this year's event with Automation Day, Innovation Day, Safety Day, Future Skills Day and South African Day confirmed.

Electra Mining Africa is a much needed platform for buyers and sellers to connect face-to-face again. It presents an opportunity for industry networking to take place, to build business partnerships and new connections, and for new products and services to be launched.

For further information, visit [www.electramining.co.za](http://www.electramining.co.za)



## 5 - 9 September

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# Youth see career growth in SA's chemicals sector



**Lilitha Sobuza – growth opportunities especially for young women.**

YOUNG South Africans have been urged to consider careers in the chemicals sector by their peers in the sector, who believe the opportunities are vast. As we mark Youth Month, several young people who've been assisted by CHIETA, the chemical industries' Seta, say they believe the chemicals sector can help South Africa position itself as an industrial powerhouse on the continent.

Citing the American Chemistry Council, Camagwini Faleni who studied a Diploma in Analytical Chemistry at the Cape Peninsula University of Technology says, "More than 96% of all manufactured goods are directly touched by the chemicals sector. Through chemicals we can make the world better, take for examples pharmaceuticals, so be enthusiastic about your chemistry journey."

Faleni has just finished his Work Integrated Learning (WIL) programme at Fine Chemicals Corporation, with CHIETA's funding assistance. Lilitha Sobuza who studied Chemical Engineering and is currently doing WIL says, "I'd advise young people to look into the chemicals sector, especially young women, as there are lots of growth opportunities."

Tebogo Moloto who studied a BSc (Hons) in Mechanical and Mechatronic Engineering at the University of Cape Town, secured his WIL at Astron Energy with CHIETA's assistance. He has this advice, "We as youth can identify sectors and skills to grow industrialisation and job creation in South Africa. If we study these fields, and

apply our expertise to these industries, it could make a difference to driving the development of our country."

CHIETA's investment in youth-centred programmes is reflected in the range of initiatives implemented over the past financial year. These are learnerships, apprenticeships, work integrated learning, bursaries, targeted skills and entrepreneurial development programmes, as well as support for start-ups and SMMEs.

Yershen Pillay, CEO of CHIETA, explains, "Our new vision means we've adjusted our purpose to be

broader than simply skills development and training. We're now in the business of sustainable livelihoods. This incorporates identifying skills gaps and finding ways to close these gaps through training initiatives in partnership with higher education institutions, public sector entities, training providers, and private organisations."

Pillay says that through CHIETA's impactful programmes, "we plan to support 10 068 learners in the current financial year and a total of 50 340 over the next five years." CHIETA is supporting 17 221 new jobs in the chemical industries sector, plus a further 6 567 this year alone, and investing R66.1m in learnerships and internships, which have supported 2 500 first-time job seekers and young artisans.

Other CHIETA initiatives include an investment of R5 million into new and emerging technologies for skills development, including a virtual reality training facility for chemical operators. By 2025, CHIETA plans to support the growth and sustainability of 2 000 SMEs and 200 cooperatives.

# Festo participates at the eLearning Africa Conference and Exhibition

FESTO Didactic recently participated in the largest and most comprehensive knowledge-sharing event for technology-enhanced education, training and skills on the African continent; eLearning Africa Conference and Exhibition. This three-day conference that covered a range of issues under the theme: "A new purpose for education", took place on the 11th-13th May 2022.

Renowned for its commitment to technical education, Festo was represented by two prestigious delegates, Nader Imani, the Executive Vice President for Global Education and Horst Weinert, the Head of Festo Didactic Eastern and Southern Africa. Mr. Imani shared his expertise on the topic, "does digital equal eLearning?" whilst Mr. Weinert contributed his knowledge about "TVET Made in Germany: Developing skills for employability".

## TVET made in Germany

German-based companies have, for years, played a vital role in contributing to the economy of Africa. The various industries in which these companies partake require a skilled workforce. While the job market has a high number of job seekers, industrial companies are still



**Horst Weinert welcomes guests to the Festo stand.**

in need of employees that possess the skills required in the labour market. This means that the education that the students acquire does not match the needs of the industry. It is for this reason that Germany introduced a dual system where employees go to vocational institutions for training during the length of employment.

With their roots in Germany, the multinational company Festo Didactic brings the needed experience and knowledge required to bridge industry and education. Its comprehensive training solutions range from individual learning systems, complete workstations, training packages, software, e-learning and more. According to Mr. Weinert, the company's solutions equip training institutions and companies to develop trades in

demand that will close the skills gap that exists between the industry as well as education, thus increasing employability.

## Festo Didactic exhibits its innovative digital learning solutions

Festo was also an exhibitor in the German Pavilion, where they showcased their Tec2screen with the connect interface, the bionic flower and pneumatic starter kit. A Tec2Screen is an interactive learning companion that facilitates connected learning. Connect interface and Tec2Screen, allows students to bridge the gap between the virtual and real worlds. The courses and simulations that Festo has developed provide the content for learning, informing, regulating, and programming.

The FACET elec-

tronics training system, the Bionic Kit and Festo LX were also used to demonstrate how e-learning plus hands-on makes for effective blended learning. The FACET with eSeries training system is a unique combination of hardware and software, providing a complete learning solution for electronics training.

Festo is the world-leading provider of technical education and has embedded knowledge and education in the company's DNA. It has, for years, designed and established training centres, laboratories, learning systems and training programs throughout the African continent.

To learn more about Festo's digital offerings, visit: [www.festo.co.za/didactic](http://www.festo.co.za/didactic) or contact the sales team on 086 003 3786

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# The proof is in the packaging



ACCORDING to a 2021 Council for Scientific and Industrial Research (CSIR) report, 45% of the available food supply in South Africa is lost or wasted. The report goes on to state that most of that waste (49%) happens in the processing and packaging stage of the value chain. With the situation in the Ukraine threatening

to spark a global food shortage, eliminating waste has never been more important. By investing in sustainable packaging, listed consumer packaged goods (CPG) group Libstar, is looking to reduce waste and contribute to the circular economy.

Derek Couzens, Commercial Executive at Rialto, a member of the Libstar family, says,

“In 2018, we started off with just five biodegradable and compostable products in our Food Service offering. Now, we have over 120 and counting, including our Precious Planet range of our enviro-friendly packaging products. By the end of the year, we are aiming for 40% of all our Food Service packaging to be entirely sustainable, either recy-

clable, biodegradable, or compostable. That is essential if we are to do our part in being responsible corporate citizens.”

### Going around in circles

A circular economy is an economic model designed to minimise waste by moving away from single use mate-

rials and encouraging sustainable production techniques. From a packaging perspective, this means creating and utilising materials that can be recycled, used as compost or reused repeatedly. For example, the push for creating circular economies has fuelled the use of bagasse, a waste product of sugarcane, as a sustainable packaging solution.

As things stand, recycling is one of the best practical examples of what circular economies could look like. To contribute to reducing waste and increasing recovery, as well as the recycling and reusing of materials in the South African market, Extended Producer Responsibility (EPR) fees were introduced locally in November 2021. Rialto too has moved quickly to achieve compliance.

In Europe large portions of waste are either incinerated or exported, and therefore have a lower recycling rate compared to South Africa where very little waste is incinerated. In 2019, South Africa achieved an output recycling rate of 23,4% versus 7,9% recycling rate for Europe.

According to the Paper Manufacturers Association of South Africa (Pamsa), in 2022 the local recycling rate of paper and board in South Africa is 70% versus the global rate of 59.1%.

### ‘Generation Sustainability’

Couzens says, “The research we have encountered shows that 83% of millennial consumers prefer to pay more for sustainable packaging. This, in turn, has led to some sustainable products growing at a rate of more than seven times that of non-sustainable ones. That means being environmentally ethical is not just the right thing to do, it is also an ultimate sustainable value-add to one’s business and business partners.”

Couzens concludes, “Everyone has a role to play, and the key is the acceptance of our roles. In the past that has been problematic, but we are seeing encouraging signs. For our part, the job is to make sure that our manufacturing and packaging processes are as green and eco-friendly as we can possibly make them. Companies that fail to take sustainability seriously will have a hard task attracting the customers of the future.”

## 20 Years NCPC

INDUSTRIAL EFFICIENCY IN SOUTH AFRICA

The **NCPC-SA** is a national industrial support programme that drives the transition of local industry **towards a green economy**

Services and focus areas include industry and sector knowledge-sharing, company technical support; green skills development; and advocacy and awareness-raising.

Since 2002, the NCPC-SA has:

-  Advised and assessed over **1700 companies**
-  Saved almost **7 000 GWh of energy** in industrial plants
-  Helped mitigate over **7 million tonnes of GHG emissions**
-  Trained over **6 500 professionals** in resource and energy efficiency



### 2002 – 2022

The National Cleaner Production Centre South Africa (NCPC-SA) was established at the Joburg World Summit on Sustainable Development in September 2002. Its success since then has made it a true legacy project of the summit.

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## Portable cooling systems and quality deburring tools



JTB Industrial Solutions (JTB) offers a supply of spray mist portable cooling systems from its long-standing international supplier Noga Engineering; as well as a range of deburring tools, both of which provide significant advantages and benefits to customers.

### Simple and cost-effective cooling

JTB Operations Manager Peter Hughes explains: "Noga cooling systems are applicable in all metal-

working operations to alleviate points where friction occurs between the tool and the work piece, producing heat and tool wear. To counteract these harmful influences, Noga cooling systems are introduced at the contact points between the tool and the work piece. JTB supplies the Noga MIC1700 MiniCool spray mist portable cooling system, which is designed to spray an air and liquid mixture. The MiniCool enables the user to easily control both the air flow rate and

the liquid rate."

The Noga MiniCool can be used for large fabrication facilities, mine maintenance workshops, in the automotive industry and for original equipment manufacturing, as well as in education and training environments. Features of the Noga MiniCool, include:

- The system is portable;
- Attachment is via a strong magnetic base;
- The adjustable nozzle is attached to a flexible hose,

for direction spray pattern, and

- Separate on / off air and fluid controls are provided.

### Deburring tools

In addition to the cooling system, JTB also stocks a range of Noga deburring equipment. Hughes notes: "Large automatic machines are a key part of modern manufacturing plants producing metal or plastic parts. Factory workers are required to handle and inspect every part coming from these machines, and they will also be tasked with removing the burrs - unwanted raised edges, or pieces of material - which have appeared during the manufacturing process. Therefore, to improve the finish of these products, Noga makes a full range of deburring products. These include different configurations to allow the tool to reach every point or site on the product from which a burr must be removed.

## Zest WEG poised for African growth



Generators at the Zest WEG manufacturing facility in Cape Town.

AFTER a decade-long expansion of its manufacturing capabilities in South Africa, Zest WEG, the South African subsidiary of Brazil's WEG Group, is well placed to extend its already extensive footprint in the African market.

"We now have six manufacturing facilities in Gauteng and Cape Town, producing a wide range of equipment including gensets, transformers, electrical panels, E-Houses, MCCs and mini substations," says Zest WEG's outgoing CEO, Juliano Vargas. "This ability to manufacture locally gives us a huge advantage in the African market, as we can produce economically and deliver promptly to countries throughout the sub-Saharan region."

"WEG now manufactures in 12 countries outside of Brazil with these facilities accounting for more than a third of the Group's global production," he says. He adds that Zest WEG is amongst the largest WEG operations outside of Brazil, including USA, Germany, and China.

Vargas's successor as CEO of Zest WEG is Eduardo Werninghaus, who has been with WEG for more than 15 years and who comes to South Africa from WEG's USA subsidiary. "I've been briefed to build on the very firm base created by Juliano and his predecessors," he says. "WEG is not a

company that is fixated on next quarter results only. It thinks and acts long term and considers Zest WEG as being crucial to its future, given Africa's enormous growth prospects which include a need for massive investments in energy infrastructure."

"Being local in Africa is a key part of our strategy," says Werninghaus. "We need to be close to the countries and communities we serve."

Most of Zest WEG's product offering will be on display at the Electra Mining Africa 2022 exhibition. "Our theme, as always, will be how to change energy into solutions," says Werninghaus. "There will, however, be a particular emphasis on efficiency and sustainability. One of the products that we'll be highlighting is our range of WEG IE4-rated super-premium efficiency electric motors which were launched locally last year and which cost no more than their IE3 predecessors. These are the most energy efficient motors in the market and offer major operating cost advantages to users."

Werninghaus says that the WEG IE4 motors have already received a warm reception from the mining industry, which is struggling with constantly rising electricity costs. "A medium-sized mine typically has between 2 000 and 3 000 electric motors on site -

powering everything from fans and pumps to conveyor belts and screens - so the potential for very significant energy and cost savings is huge."

He points out that electric motors account for about 40 % of all industrial electricity consumption and that around two-thirds of these motors are on mines.

Many high-tech products and systems will be showcased at Electra Mining Africa 2022 including WEG Motor Scan, which allows the continuous monitoring of electric motors and other rotating machines; and Pump Genius, a software package that enables a standard VSD to be dedicated to specific pumping systems with various motor and pump combinations, thereby providing improved control and monitoring capability.

Also on show will be WEG's new Motion Fleet Management system, which uses artificial intelligence and machine learning to diagnose and monitor rotating equipment such as motors, VSDs, gearboxes and compressors. Based on cloud computing technology, the performance of assets can be monitored at any time from any part of the world. This approach reduces unplanned downtime and optimises repair actions.

For more information visit: [www.zestweg.com](http://www.zestweg.com)

## WSP to assist in delivery of BESS across several Eskom distribution sites

IN October 2021, WSP was appointed as the Engineer for Eskom Battery Energy Storage Solutions (BESS) project located at several Eskom distribution sites in the Western Cape, Eastern Cape, Northern Cape and KwaZulu Natal. The WSP responsibilities include engineering, assistance in procurement, construction supervision, project management, and commissioning

on the Melkhout East (Eastern Cape), and Pongola and Elandskop (KwaZulu Natal) substations for a minimum of 35MW/140MWh at Melkhout, 40 MW / 160 MWh at Pongola, and 8MW/32MWh at Elandskop. The third package is for the Paleisheuvel, Graafwater, and Hex substations in the Western Cape. It is for a minimum of 10MW/40MWh

project. It will also supply the professional engineering services to review the deliverables provided by Eskom and other third parties to integrate and co-ordinate the overall engineering. WSP will continually analyse the technical specifications, perform the technical evaluation of tenders - and provide professional assistance for the procurement of the packages identified for the project.

During the construction phase of the project, WSP will act as the Engineer on behalf of Eskom and will monitor plant and equipment manufacturing as well as monitor and inspect the construction, commissioning, and testing of the contracted works of the contractors and their sub-contractors in providing, installing, and setting to work the project.

Furthermore, acting on behalf of Eskom as its Engineer, WSP will be authorised to communicate with the EPC contractor for clarification and seeking resolution of technical issues.

### Instrumental guidance

As part of the detail design process, WSP will perform a HAZOP analysis to identify potential hazards and operability problems caused by deviations from the design baselines.

"The HAZOP analysis is used to evaluate the design for possible flaws or undesirable effects and interactions with vendor designs. Together with the LSA process, this will ensure that potential failures are identified and eliminated during the detail design process," says Dinesh Buldoo, Director: Power, WSP in Africa.

Furthermore, WSP will oversee the construction phase of the project which will include all tasks from the design and engineering activities to the handover from the EPC contractors to Eskom. The purpose of this stage is to check that the EPC contractors will provide a quality service as per the EPC contract within the stipulated budget and time frames.

"The HAZOP analysis is used to evaluate the design for possible flaws or undesirable effects and interactions with vendor designs."

services for the project. The project is divided into three packages across the seven Eskom distribution sites. The first package at the Skaapvlei substation in the Western Cape entails the design, supply, and installation, and commissioning of BESS for a minimum of 80MW/320 MWh usable capacity. The second package focuses

at Paleisheuvel, 4.5 MW / 2.5 MWh at Graafwater, and 20MW/100MWh at Hex. All the packages include five years of operations and maintenance.

The professional team from WSP is responsible for providing assurance on engineering design, construction supervision, and project management for the BESS

### CAPE Business News

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# Managing facility shutdowns to avoid costly breakdowns



Lydia Hendricks.

WHILST South Africans are frustrated with having to contend with hours of loadshedding, FM Solutions, (established in 2002) says these long periods of power outages offer the ideal opportunity to test the capacity of built-in systems and to perform much needed inspections, maintenance and repair jobs that require a complete shutdown of the facility.

“Shutting off the main electricity supply to a building can be disruptive for most organisations - particularly those who run 24/7 operations. It is an important, yet complicated project that needs to be carefully managed and coordinated in order to limit disrup-

tions and “downtime” as much as possible. For this reason, many companies avoid check-ups because of systems reliance and disruption to business,” explains Lydia Hendricks, Business Development Director at FM Solutions.

Lydia provides insights into the most frequently asked questions relating to complete facility shutdowns:

- How often must a complete facility shutdown typically take place?
- Medium Voltage (MV) Switchgear and transformer upgrades are the only services that would require a full shutdown to affect maintenance upgrade and major repairs. A complete facility shutdown is not necessarily to affect maintenance but is advisable to test the critical interconnected systems that serve the building. During this time, the equipment

capacity should be tested, and the related maintenance interventions identified to ensure the ongoing stability and safety of the building systems – necessary in the event of total blackouts or fire in a building.

- Other typical systems that should be tested during facility shutdowns include fire systems, lifts, emergency lighting, back-up power capacity, HVAC extract system to name a few. Most assets have guarantees and warranties that stipulate maintenance conditions and frequency of maintenance servicing to ensure its reliability and longevity. It is vital for these maintenance and servicing tasks to be done in order to uphold the terms of the guarantee.
- Some of these assets often form part of (or are interdependent

with) other critical systems that aid the overall safe function of a building. For example, smoke detectors are linked to a fire panel and a Building Management System that send warnings when emergency intervention is required. Failure to service and test the links to this panel could result in critical communication being compromised and ultimately lack of response to these alarms would result in serious losses if not attended to.

- Reinstating systems when contractors attend to their side of maintenance is often the main reason for system failure and in most cases found after an incident has occurred.
- What are some of the safety requirements that need to be taken into consideration (and be complied with) during such main-

tenance upgrades?

- Risk Assessments and Safety Task Analysis should be a standard process in place that should be enforced when embarking on a full shutdown of the power. Typical risks linked to a shutdown are that the entire building will be in complete darkness and therefore synchronising and step-controlling the process with contractors responsible is important to ensure the safety of the teams responsible for the tests.
- Testing fire systems should include release of escape doors and their operation to ensure safe evacuation. For the same reason, a company’s security staff (technical and non-technical) should be reminded to also regularly check that these automatic doors are open for evacuation.
- How does FM

Solutions go about preparing for a planned shut-down to perform the necessary upgrades, repairs of maintenance at a client’s facility?

Our safety systems support these activities. Furthermore, we have set procedures for such documented and critical systems highlighted and scheduled right from the inception of contractor engagement. We execute and implement maintenance programmes in accordance with project management principles and measure and manage all risks on behalf of a vast amount of clients we provide this service for. In agreement with our client, these tests are planned, communicated and executed.

#### Conclusion:

The practice of shutdowns is often ignored because it can be disruptive as it comes at cost of service provider time and core business down-time. However,

the value of doing these shutdowns is negligible if you consider the damage that can be caused if important maintenance tasks are not regularly performed (the damage caused at Parliament’s House of Assembly after a fire extinguishing system failed to kick in timeously, is a sad and telling example).

FM Solutions has the expertise and experience to coordinate and manage complete facility or system shutdowns, keeping cost and disruptions to a minimum. We develop an affordable and manageable preventative maintenance plan for each client, whilst also developing fit-for-purpose rectification plans to address high risk maintenance - based on the findings of the shutdown. We partner with our clients by assisting them with life-cycle costing and valuable data for a streamlined maintenance budget.

For more information, visit [www.fm-solutions.co.za](http://www.fm-solutions.co.za)

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Through partnering with clients, FM Solutions Technical ensures compliance, increased client satisfaction, reduced costs and potential environmental impacts.

With clients spanning across the public and private sectors, FM Solutions Technical renders professional maintenance services to a range of contract types and sizes, including electrical services, building fabric services, HVAC maintenance and repairs and utility services.



[www.fm-solutions.co.za/technical-services](http://www.fm-solutions.co.za/technical-services)

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Zaahir Forbes





THE BEE IN MY BONNET COLUMN

# See and be Seen

THE first of this winter's heavy rains brought to the fore the idiots who drive along in a torrential downpour at speed, with no lights on or just on parking lights, completely oblivious to the fact that they cannot be seen by other motorists, and other road users especially if you're in the spray plume generated by a heavy truck and trailer.

It's not as though turning on one's lights costs anything - so why not?

As a first hand observer of SA's driving habits over the past 50 years, my impression is that the average South African driver takes no pride in driving well - driving is just a function of getting from A to B in the shortest possible time and so long as the vehi-

cle runs and stops after a fashion, all is OK. Perhaps that is a consequence of the 50%+ of drivers who have bought their licences and never undergone a proper test...

All the evidence of our dreadful accident and mortality rates seem to bear out this observation, plus the number of vehicles one sees with headlights out and inoperative tail and brake lights. It's not just now and then, but all the time.

A lack of basic enforcement is high on the list of reasons for our road carnage - authorities are more interested in making money from the motorist than ensuring a safe environment and this coupled with lax or non-existent legislation simply makes matters worse.

A decade or two ago, I thought that 'authorities' were embarking on a meaningful approach to improve road safety when they launched with great fanfare the "Arrive Alive" campaign.

What a joke. Since its establishment road deaths have actually increased not decreased which was the remit for the Road Traffic Management Corporation (RTMC). But hey, as there is no accountability, it provides cushy jobs for the chosen few who have the right political connections no doubt. (The CEO of the RTMC Msibi received remuneration of at least R9,3-million in the 2020/2021 financial year, according to Daily Maverick 18 June 2022.) Why then, did the country's lead

agency responsible for road safety have a surplus of nearly R262m in its 2020/2021 financial year? Surely in a country with one of the highest per capita road fatality rates in the world this money should have been spent on road safety campaigns. When last did you see one of those?

Statistics from the RTMC (Dec 2021) show, unsurprisingly, that the vehicles involved in the most fatal accidents in RSA is, wait for it, the Toyota Quantum and Toyota Hilux minibus taxis, representing a combined total of 1 600 fatal crashes. Drivers of the same vehicles clocked up more than 571 000 speeding offences, no doubt while transporting innocent, fare paying passengers...

Without the politi-

cal will, nothing will be done to make our roads safer but here are a few suggestions for anyone in authority who cares:

- Make daytime running lights (DRL) compulsory on all vehicles, especially minibus taxis and public service vehicles. A programme of retro-fitting DRL's or making dipped beam headlights automatically illuminate while the engine is running (as legislated in Canada) could create a whole new industry and thousands of jobs.
- Make mud guards on trucks and trailers mandatory on all such vehicles, on all wheels. This would reduce road spray during

heavy rain and aid visibility for all road users. Additionally rocks, stones and road debris thrown up by unprotected tyres would be minimised. Again, a retro fitting industry would benefit job creation. A design of mud-guard 'whiskers' to contain spray and debris is widespread throughout Europe and the UK, adding to road safety.

- As I've mentioned before, make yearly road worthy testing mandatory with heavy penalties (jail time) for testing station owners that flout the law or accept bribes.
- Instead of authorities seeking to balance their books with speeding

finer, get the traffic police engaged in activities that make roads safer - apprehending drivers for dangerous moving violations such as running a red light, not stopping for pedestrians waiting at a designated crossing, defective lights, overloading etc.

Its high time that elementary road safety measures were taught in schools - the most basic "Look right, look left and right again" before crossing the road and crossing where it's safe to do so, would undoubtedly reduce pedestrian fatalities which represent at least half of the 15 000 odd deaths we tolerate on our roads each year.

*Eish.*

## Cyber insurance - underpinned by a data backup and recovery strategy

By Iniel Dreyer, MD at Data Management Professionals South Africa

AS cybercrime statistics continue to escalate, insurance providers have started offering cyber insurance cover to businesses. Intended to assist organisations to handle the financial impact of a cyberattack, such cover is useful but requires a solid backup and data recovery plan to place the insured company in the same position they were before the attack materialised.

### The cybercrime landscape

A study conducted by Kaspersky highlighted a 24% spike in ransomware in South Africa from Q1 2021 to Q2 2021 along with a 14% increase in crypto-miner malware. According to an IBM study, a data breach in South Africa costs on average R36.5 million, and the aftermath of a data breach can be felt for years after the incident. However, large businesses are not the only targets. Hackers are indiscriminate and 43% of cyber-attacks target small businesses, yet small businesses face disproportionately larger costs relative



to bigger corporates, which can hamper their ability to recover financially.

There is a clear need for insurance providers and technology companies to work together in educating their client businesses on the risks and implications of data losses, while positively demonstrating the value in steps that can be taken to prevent and remediate.

### A serious risk for all businesses

Data is one of the most valuable business assets today but keeping that data protected and consistently available, no matter where it is stored across the business - whether on-premises data centres to hybrid cloud architecture - is becoming increasingly complicated. Having a realistic data management, backup and recovery plan in place is

critical for any business that has an internet connection and that deals with customer data. Currently the trend is to focus on breach prevention, but it will be necessary to pay just as much attention to remediation and recovery after an event.

### Uniting prevention and remediation

The purpose of data backup and recovery is to create a copy of data that can be recovered in the event of a primary data failure, such as hardware or software failure, data corruption, or malicious attack. Accordingly, proactive, not reactive data recovery plans and procedures are necessary. Businesses will have to start with an audit of their data, which includes assessing priority levels for recovery in the event of a breach. By partnering with a

data management specialist, companies can outsource the management, protection and recovery of data entirely to a trusted third-party provider. Backup as a Service levels the playing field for businesses of all sizes, and because it's consumption-based it becomes an operational expense rather than a capital outlay. From a premium and a cost of risk perspective, having the proper data backup and recovery systems in place will benefit the insured.

### Collaborative crime-fighting opportunity

In terms of choosing cyber insurance, businesses should be engaging with their insurance providers, and driving the demand for cover products that are better aligned with prevention and remediation of cyber-attacks. This is a golden opportunity for a mutually beneficial synergy between insurance providers and data management and cybersecurity technology companies to work hand-in-hand. By coming together, insurers and technology companies can play a critical role in addressing cybercrime and helping companies large and small protect their business-critical data properly.

## Seminar showcases Europe's food safety, quality standards and trade opportunities

THE EU and South Africa held a special two-day seminar on European agri-food products on 18-19 May 2022. The event focused on making the EU's high quality and Sanitary and Phyto-Sanitary (SPS) standards for agri-food production more familiar to South African government and private sectors.

Internationally renowned as one of the most rigorous food protection regimes in the world, the EU's SPS system ensures that European products exported to South Africa—and all around the world—are safe, traceable, and of the highest quality possible. The event welcomed South African government representatives, importers, chambers of commerce, retailers, the hospitality sector, consumer organisations and the media.

There is a need for agri-food trade flows between the EU and South Africa to improve, even more with the Economic Partnership Agreement (EPA) in place. Accelerating trade in agri-food products is already a testament to the popularity of Europe's high quality and safety standards for food and

drink amongst South African consumers.

Meanwhile, Georg Southey of Merlog Food, Executive committee member of the Association of Meat Importers and Exporters emphasised the need for policy consistency and predictability. According to him, South African businesses need to import specialised food products, such as higher value meat cuts which are not necessarily available locally. The EU meat products offer traceability and availability in terms of transport links to South Africa. He encouraged development of trade and equivalence of standards as well as consumer education and sharing of information on the EPA opportunities.

Ms Matlou Setati, Executive of the Food Safety Initiative at the Consumer Goods Council of South Africa pointed out that consumers in her country still needed more awareness about protected names and designations of origins of authentic local products. This knowledge could be of particular asset for the maturing middle class segment of the market.

Speakers also

stressed the need for the traders to pay attention to the peculiar, very varied consumer strata of the South African society, with middle class representing around 20% of them.

The seminar also hosted experts presenting the EU's sustainability agenda (the EU Green Deal and Farm to Fork Strategy), as well as EU food quality and safety systems. Speakers further elaborated on the European Single Market with regard to food production, food safety, animal welfare and plant health. The seminar also presented the strict policy the EU holds in relation to the restrictive use of pesticides and antimicrobials in food production. Finally, the event included sessions on trade opportunities offered by the EU's Geographical Indications (GI) and organic farming systems.

The representatives of EU major producers' organisations representing the meat, dairy, wines, spirits, beers, fruit and vegetables and olive oil sectors presented the practical approaches to the food safety and quality standards applicable to their products.



## ISO 14001 delivers on ESG



ISO 14001 compliance achieved! JC Auditors' Managing Director Oliver Naidoo (right), with Super Group's Kevin van Wyk.

ENVIRONMENTAL, Social and Governance (ESG) has fast become one of the top considerations for companies, as the pressure from regulators, politicians, investors and consumers mounts. Measuring the environmental impact and efforts to increase sustainability in operations, investors are prioritising ESG as a consideration when making investment decisions, while consumers are also becoming increasingly aware of and demanding responsible governance practices.

From reducing the carbon footprint, responsible energy management and eliminating unnecessary waste, to fair compensation, worker rights and anti-corruption policies, businesses must show more accountability and credible disclosure, amidst greater regulatory scrutiny.

According to Oliver Naidoo, Managing Director of certification body JC Auditors, forward-thinking companies don't just want ESG to be a marketing slogan, but actively look for innovative and practical tools to demonstrate their ESG performance.

"One such tool, the ISO 14001 Environmental certification, provides tangible and verifiable evidence of an organisation's commitment to the environment, specifically the prevention of pollution and responsible energy consumption," he says.

ISO 14001 is the international standard for environmental management and provides a framework to holistically manage the environmental performance of an organisation.

With more than two

decades of ISO 14001 experiences, Naidoo says a crucial component of implementing responsible environmental management practices is ensuring that a holistic cradle-to-grave approach is adopted when identifying environmental aspects and their associated impacts. This includes considering the needs and expectations of all interested and affected parties.

General benefits of ISO 14001 implementation include a positive corporate image as it demonstrates a commitment to environmental responsibilities; improved leadership and employee engagement as its implementation requires the engagement of senior managers to ensure the success of the EMS; and, improved compliance with legal requirements. It also reduces costs.

"By improving waste management, enhancing the use of resources, and lowering energy consumption, businesses can uncover significant savings," says Naidoo.

JC Auditors provide ISO and RTMS certifications to various industries, notably the logistics sector which accounts for approximately 40% of carbon emissions globally. The company has pioneered ISO 14001 certification in the road transport sector in South Africa and neighbouring countries.

According to Naidoo, certified companies must demonstrate compliance with the prevention of pollution and responsible energy consumption as part of their ISO 14001 environmental objectives.

"A very common environmental action plan implemented by

road transport operations is the training of drivers on economical driving," explains Naidoo. "The training content typically focuses on key aspects including avoidance of harsh acceleration, harsh braking and excessive engine idling; correct gear selection for driving speed or driving on the green band – all of which has a direct impact on minimising fuel consumption – especially significant in light of the recent incredible fuel price hikes – and reducing carbon dioxide emissions.

This focus on driving behaviour is one of the most effective, yet under-utilised, means to improve one's environmental performance." He says that road transport companies implementing the ISO 14001 environmental management standard must look at managing their energy/fuel consumption and consequent exhaust emissions.

"Whilst these are the two fundamental reporting measures, there are various other related aspects such as vehicle efficiency, tyre management, maintenance practices and, of course, driving behaviour – which has a critical impact on fuel consumption and the resultant carbon emissions."

Naidoo believes certification, however, is not just about satisfying external stakeholders: it must add value to a business internally.

"JC Auditors' integrated and cost-effective certification solution is steadily finding greater adoption in the industry, as more companies seek to show that they are serious about their ESG performance," concludes Naidoo.

## ISUZU Motors invests R580m in local suppliers

ISUZU Motors South Africa has invested R580m to support component localisation. This investment includes provision of the supplier tooling needed to manufacture specific components in preparation for the recently launched all-new 7th generation ISUZU D-MAX bakkie.

Localisation is the process where an increased percentage of the parts and costs of a motor vehicle is either assembled or manufactured in South Africa rather than imported.

Aligned to the South African Automotive Masterplan's (SAAM) set target and aspiration of ensuring local value addition of 60% by 2035, ISUZU has driven localisation as a key strategic imperative for the business.

Billy Tom, ISUZU Motors South Africa President and CEO says, "Localisation is essential in transforming the automotive sector. SAAM 2035 could



ISUZU D-MAX bakkie.

see the automotive industry growing from 600 000 to 1.4 million vehicles a year in production. This presents a huge opportunity for us to support black-owned automotive suppliers in building their businesses in the industry. It will help drive transformation and create jobs."

Consequent to the R580m investment, suppliers now have the necessary machinery and equipment

required to manufacture the components needed by ISUZU. Through this process ISUZU has had the opportunity to work with 107 local component manufacturers, maintaining a local value add content footprint and creating at least 235 new job opportunities at local component manufacturers.

One such example of our localisation strategy is the partner-

ship between ISUZU Motors South Africa and 73% black-owned supplier Acoustics, based in Gqeberha. They were awarded with both the sound and carpet assembly contracts specifically for the new D-MAX bakkie. Responsible for the manufacturing of smaller boot liners, Acoustics have assisted ISUZU in achieving an industry first through the installation of local vinyl mats.

## New steel and heat treatment raises performance of bearings in wind turbine gearboxes

SKF has developed a new roller bearing for wind turbine gearboxes that offers bearing rating life at the forefront of the industry and enables reduction of downtime and maintenance.

The SKF high durability gearbox bearing for wind relies on a tailored combination of steel and heat treatment process that is developed to raise fatigue resistance and robustness. A thermochemical heat treatment process improves its surface and subsurface properties.

"The heat treatment process enriches the surface layer of the bearing components and improves the material strength both at and below the surface, covering the high stressed material volume during bearing operation", says David Vaes, manager of the Wind Gearbox Competence Centre at SKF. "Rolling bearing performance very much depends on material parameters such as microstructure, residual stress and hardness."

This tailored steel and heat treatment process has several benefits: it increases bearing rating



life and enables downsizing; increases the new bearings capacity to resist typical failure modes in gearboxes, such as premature failures related to White Etching Cracks (WECs), micropitting and wear.

Internal tests and calculations show up to a fivefold increase in bearing life compared to current industry standard. Moreover, an up to 10-times higher robustness against stress induced premature failures with WECs have been proven on in-house test rigs.

The improved performance of SKF high durability gearbox bear-

ings mean the bearings can be downsized, helping to increase torque density of the gearbox. This is critical in the latest generation of multi-megawatt turbines.

In a typical planetary stage of a 6MW wind turbine gearbox, a size reduction of up to 25%, of the planet wheel bearing and consequently of the planet gear as well, is achievable by using SKF high durability gearbox bearing while keeping the same rating life as the industry standard bearing.

Similar size reductions can be achieved on different positions in the gearbox. In a parallel

gear stage, the bearing size reduction will also reduce the risk of slip-related damages.

Resistance to typical failure modes could help gearbox manufacturers, turbine owners and service providers to increase reliability and have less unplanned turbine standstill and repair cost.

The new features help to reduce the Levelized Cost of Energy (LCoE) for wind and supports the wind industry journey to become a cornerstone in the future energy mix.

For more information visit: [www.skf.com](http://www.skf.com)



# Hydrogen powered vehicles – fool’s gold or the planet’s energy saviour?

Reproduced below unabridged, are two contrasting opinions on the topic of hydrogen powered vehicles. The pro’s were published in a recent TopAuto post while the con’s were extracted from a contribution to Quora Digest.

## First, the pro’s.

### How South Africa could benefit from hydrogen-powered cars

GREEN hydrogen is a clean source of fuel that offers a number of advantages over battery-powered electric vehicles, and South Africa is poised to become a global player in its production. Hydrogen fuel is produced as a by-product of water electrolysis which separates water, or H<sub>2</sub>O, into oxygen and hydrogen.

The term “green” is used to distinguish hydrogen produced from renewable energy sources such as solar, wind, and hydropower, as opposed to “grey” and “brown” hydrogen which is produced using natural gas and coal, respectively. While any type of hydrogen can be put into a fuel-cell car, the global demand is primarily for green hydrogen as a form of clean fuel to help facilitate a transition to zero-emissions transport.

### Advantages of green hydrogen

The first and most immediate advantage of hydrogen is that it is the most common element in the universe. While there are still challenges associated with its extraction and refinement, hydrogen has the potential to be an abundant and renewable source of energy, both for cars and in our everyday lives. Hydrogen is also far

more energy-dense than any fossil fuel, which means hydrogen fuel-cell cars have the potential to be more powerful than their internal combustion engine (ICE) counterparts, though the displacement of car’s engine will still be the main determinant of performance.

Another benefit of this energy density is that hydrogen cars have ranges that are much more in line with ICE vehicles, compared to many battery-electric cars.

One of the most common concerns about electric cars is their lack of range compared to ICE vehicles.

One hydrogen car – the Toyota Mirai – advertises a maximum range of 647km, which is better than what most of the battery-electric cars currently available in South Africa are capable of, though this gap is likely to narrow as battery technologies continue to improve.

Another concern of battery-electric cars is their long charging times and a potential lack of charging infrastructure.

The fuel cells that convert hydrogen fuel into energy can be recharged in under five minutes, and the car itself can be refuelled at a hydrogen fuel pump just like an ICE vehicle, giving hydrogen cars a notable advantage over battery-electric vehicles which can take anywhere from 20 minutes to several hours to charge, depending on the model and type of



Cutaway view of Toyota’s Mirai. Credit Toyota.

charger used.

This also means that hydrogen fuel stations can be implemented almost anywhere that a traditional fuel station could, albeit at a greater cost as hydrogen requires more complicated storage and transportation than petroleum.

### How South Africa could benefit

The advantages of green hydrogen fuel could make it a far more practical alternative to battery-electric vehicles in South Africa, given its much closer resemblance to the fossil fuels that we are used to.

The country also stands to benefit from the growing demand for hydrogen fuel as it transitions away from its dependence on fossil fuels, especially coal.

South Africa’s access to the ocean, as well as numerous solar and wind projects, means the country is in a prime posi-

tion to become a major producer and exporter of green hydrogen.

“Green hydrogen is South Africa’s next great export opportunity,” said Gladys Nabagala, director of the Energy Transition Advisory Group at Royal HaskoningDHV.

Sites for production or export of green hydrogen have already been identified at Saldanha, Boegobaai, Cape Town, Gqeberha, Ngqura, East London, Durban, and Richards Bay, she said.

An additional benefit of green hydrogen production is that it creates desalinated water as a by-product, which could help to alleviate water-stressed communities.

“With petrol prices on the rise and unemployment figures increasing again, there’s no better time than now to rethink how we can transition towards cleaner energy while also creating new industries that could employ more South Africans,” said Nabagala.

The global green hydrogen market size is expected to surpass R1.3 trillion by 2030 while this sector is set to experience a continued annual growth rate of 54% from 2021 to 2030.

Author undisclosed. Reprinted from TopAuto 16 June 2022. [www.topauto.co.za/features/48244/how-south-africa-could-benefit-from-hydrogen-powered-cars/?source=newsletter](http://www.topauto.co.za/features/48244/how-south-africa-could-benefit-from-hydrogen-powered-cars/?source=newsletter)

### Now the con’s

(From Steve Baker, a US resident.)

There has been some splash in the media about hydrogen-powered vehicles. These are really cool because

when hydrogen burns all you get is pure water. What small problem do these media raves overlook?

It’s not really a “small” problem...it’s THREE HUGE problems:

### #1 MANUFACTURING:

Hydrogen has to be manufactured. It’s not like oil or coal... it’s more like gasoline - it has to be extracted from something else.

Almost all hydrogen produced in the world is made by a process called “Steam reformation” which uses fossil fuels (coal or natural gas, typically) to extract hydrogen from steam. It is massively wasteful and pollutes just as badly as refining and burning gasoline.

So hydrogen produced this way is NAS-TIER than fossil fuels, twice as expensive, less convenient, etc., etc.

The other process is to use electricity to perform electrolysis of water. This process is as clean as the electricity you use - but it does consume VAST amounts of electricity. In the USA, hydrogen by electrolysis is only made where exceptional standards of purity are required because the prices are off the charts.

So what happens is that proponents of hydrogen technology - point to the electrolysis process and proclaim “IT’S A 100% GREEN TECHNOLOGY!!” - but then they do the ‘bait and switch’ thing and actually provide nasty steam-reformation hydrogen - which is actually the LEAST green technology we have for powering cars!

Battery electric vehicles are INCREDIBLY efficient because you’re not converting electricity to hydrogen

(inefficiently) - then compressing it for storage (inefficiently), shipping (inefficiently), storing, dispensing - and then converting hydrogen (inefficiently) back into electricity in a fuel cell car.

### #2 DISTRIBUTION:

Where are the hydrogen filling stations? Well, outside of Japan, there are a few in Europe, a few in San Francisco and LA and a couple in New York. That’s pathetic.

With an electric car - if there is a shortage of charging stations, you can plug it into any electrical outlet.

But with a hydrogen car - you need a hydrogen filling station.

Suppose you live in (say) Dallas. Your hydrogen car has a 600 mile range - but the nearest filling station is more than 1000 miles away. Ooops!

Suppose you’re an entrepreneur and decide to build a hydrogen filling station in Dallas. How many customers will you have?

Well...zero. Not one single one. Not even people who live close to you are going to buy a hydrogen car because they can only drive 300 miles in any direction before they have to turn around and come back again because you’re the only filling station for over 1,000 miles.

So the only way for hydrogen to take off would be for someone to spend maybe \$100 billion on hydrogen filling stations - and have them sit mostly idle for 10 years while the number of hydrogen cars slowly builds up to the point where you can be profitable.

That’s not a business model that ANY company would undertake.

### #3 THE CARS:

The biggest selling hydrogen car is the Toyota Mirai. It costs \$75,000 and has a 0-60 time of ...oh...9.2 seconds. Toyota makes a \$60,000 loss on every one they sell.

Geez! You seriously expect me to pay luxury sports car prices for something that’s that dog slow?

Maintenance is also a major problem. Because the hydrogen has to be reacted with oxygen from the air - you need very good air filters. There is an expensive catalyst that needs replacement fairly frequently - and some kind of organic membrane inside the fuel cell that also needs regular replacement. None of those things are cheap - and you need a specialist Toyota dealership to do the work (and there isn’t one in Dallas...so see problem #2)

### CONCLUSION:

It is absolutely blindingly obvious that hydrogen is a HORRIBLE way to go.

Battery electric cars are no longer “The Way Of The Future” - they’re already here - and given the way sales are spiralling - we’ll be all converted over in 10 years with gas and diesel vehicles becoming rarer and rarer until you wake up one day and realize that you haven’t seen one for a couple of years now.

EV’s are better in every single way - cheaper to buy, cheaper to run, cheaper to maintain, more acceleration, more top speed, less fuss to recharge/refuel, simpler...

Honestly, finding one single thing that’s good about a hydrogen car is one hell of a struggle.

Comments from Steve Baker, Senior Software Engineer 2013-present, BSc in Cybernetics, University of Kent Graduated 1977. Lives in Las Cruces, New Mexico, has had 135.3million content views, 4.3million this month via Quora Digest - [www.quora.com](http://www.quora.com)

(A more balanced article can be read at <https://www.autoexpress.co.uk/electric-cars/93180/hydrogen-fuel-cells-do-hydrogen-cars-have-future>. Ed)

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## Customised design wins Anglolan crane order

Continued from P1

will be sited between the conveyors to allow uninterrupted crane movement over them. The gantry will later be extended to allow the crane to service additional milling areas as and when they are built.

Road transport limitations were over-

come by designing the 26-metre-long overhead crane girders to be spliced in two places, and by reducing gantry leg height to match the 12-metre length of the flatbed transports. Additional completed gantry height will be achieved by concrete

plinths cast as part of the milling area foundation, and by steel pedestals incorporating the crane's end-carriages fastened below the crane girders.

Effective lifting height after commissioning will be 16 metres.

Consulmet Pty

Ltd's 50-ton crane and 29-metre-long gantry will first assist with milling area construction before its role moves to plant maintenance.

Condra will draw on several decades of spliced girder experience during the manufacture of this crane, which is a scaled-down replica of an 80-ton machine installed at a Rustenburg mine.

Each 26-metre box girder will be delivered in three sections manufactured with built-in camber, then spliced on site in two places ahead of installation. At the splices, steel plates welded to the four inside faces of the male section will deliver a friction grip to reinforce girder strength and integrity beyond that delivered by the splice bolts alone. Bolt holes will be reamed and the bolts themselves machined for an exact fit that will retain camber after assembly.

"This proves once again that a bespoke, designed-for-purpose approach to the customer's requirements will usually carry the day," commented Condra's managing director, Marc Kleiner.

"It would have saved the customer money to manufacture girders integrally, but road routes to some African mines continue to present obstacles to the steerable dollies needed for delivery," he explained.

"In this case, no crane component will exceed the stipulated twelve-metre load length of the five semi-trailer trucks that will carry everything to site."

To be operated in the open air, the 50-tonner's box girders are sufficiently large to need Condra's patented storm brakes against wind loading. Anemometers will activate these safety devices in two stages, first sounding a siren at a wind speed of 50 km/h, then automatically engaging the storm brakes at a wind speed of 70 km/h, overriding crane operation and securing the machines against further movement.

Weather covers will protect all motors, and the crane will feature frequency drives throughout. Both of the crane's 26-metre-span box girders will be fitted with full-length walkways. Crane control will be by radio remote with pendant back-up.

Delivery of Consulmet Pty Ltd's 50-ton overhead crane is scheduled for the end of June.

Visit Condra's website:  
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## Energy efficient water pumps save costs and planet

“ORIGINAL equipment manufacturers like Grundfos have been working hard for many years to make our pumps more energy efficient,” says Nicolette Gomes, senior service sales specialist at Grundfos. “I am still surprised that few pump users take advantage of the opportunity to improve their bottom line by cutting energy costs – at the same time reducing their carbon footprint.”

Doing this requires firstly a clear picture of a company’s current energy costs, says Gomes, so Grundfos offers an ‘Energy Check’ service to help establish the foundation for a considered solution. This involves a service engineer visiting the site and collecting data from pumps and motors, as well as basic energy consumption indicators.

“From this data, we produce an analytical report that shows where improvements can be made,” she says. “Knowing exactly what our energy-efficient Grundfos systems can achieve,



Nicolette Gomes, senior service sales specialist at Grundfos.

we can compare these expectations to the current situation; in our experience, the savings can be up to 30%.”

The information contained in these reports also includes the new system’s lifecycle costs and its return on investment (ROI). She highlights that some customers’ energy savings have paid off the new equipment in less than two years, after which the system provides ongoing and substantial savings in operational costs.

“A useful rule of

thumb is to look at the age of the pumps in your existing arrangement – and if they are older than six or seven years, then an upgrade invariably makes perfect financial sense,” she says. “Where the capital outlay can be recouped in three years or less, it is usually an easy decision to make.”

Where data is more difficult to gather – for instance, where nameplates have been removed or are not legible – Grundfos can also conduct a more intensive Pump Audit. Using

a range of equipment from a specialised audit kit, the service engineer will install flow meters and pressure transducers, and measure kilowatt ratings of pumps.

“This will log data for five to seven days, to create a detailed load profile for the customer,” she said. “An added benefit is that the cost of this audit is deducted should they decide to go ahead with our Grundfos solution.”

This intervention is of particular interest to the head of engineering in a plant or facilities manager in a building, whose key performance indicators (KPIs) are often linked to the cost-effectiveness of their operations – as well as the carbon emissions generated.

“With services like our Energy Check and our Energy Audit, we can help key personnel to achieve their KPIs in relation to energy consumption,” she concludes.

For more information visit: [www.grundfos.com/za](http://www.grundfos.com/za)

## Municipal water treatment success by NuWater

SOUTH Africa’s water transmission network can be significantly improved by outsourcing water and wastewater treatment to private sector experts such as NuWater. The South African Infrastructure Fund’s public-private partnership (PPP) model supports this dynamic view. An example of a PPP in action is NuWater’s agreement with various local municipalities to operate several UF package plants.



### Still Going Strong

In February 2020, NuWater approached a South African municipality with a voluntary bid to supply additional water using a Seawater Reverse Osmosis plant. The proposal was accepted in 2021 due to an ongoing water crisis, which started with the severe drought in 2018. The daily water requirements for the region fluctuate between 6-8MI/day, and the previous water treatment plant failed to deliver the required output. NuWater supplied

the infrastructure to connect the water treatment plant to the existing network along with all the necessary process equipment. An operation and maintenance contract supports the delivery of infrastructure and equipment to ensure the plant is operated as efficiently as possible. Given the crisis and the severe lack of water, 0.25MI/day is provided to the city free of charge.

For further information visit: <https://nuwater.com/>

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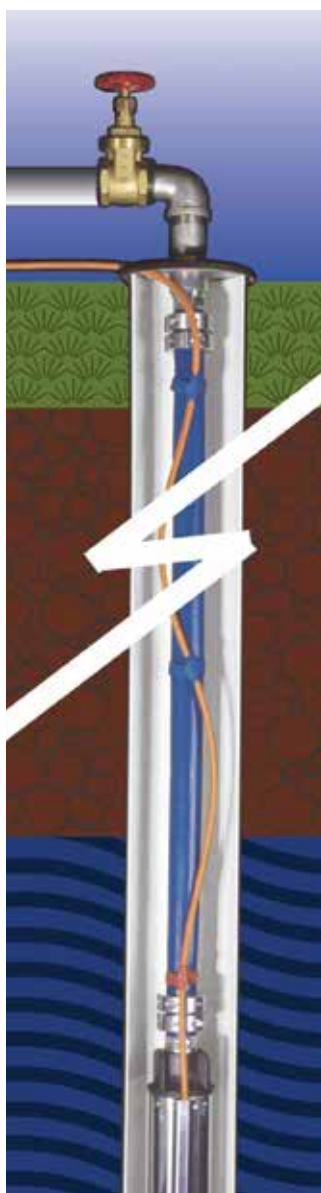
The initial capacity at a municipal water treatment plant in 2015 was six megalitres per day. NuWater successfully increased the plant’s ability to 15 megalitres at the beginning of 2019 and installed the last five megalitres per day later.

Now the plant treats 20 megalitres per day, while it has already treated over nine billion litres of water to a potable standard.

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# Five ways to start fixing SA's deteriorating water quality

By **Andi Rweqane**,  
Director of Water at  
Royal HaskoningDHV



Andi Rweqane.

POOR water quality in South Africa is becoming a major crisis across many municipalities in our country, putting at risk our health and economy.

In April this year, the Department of Water and Sanitation revealed that 34% of South Africa's water systems are of high or critical risk. The department plans to further issue 'boil water' notices in several areas with sustained microbiological failures or high levels of E. coli

or faecal coliform bacteria.

In May, reports emerged about rapidly deteriorating tap water quality in parts of Tshwane, which the city has since deemed unsafe to drink in areas such as Rethabiseng and Riampark.

Rapid urbanisation, income growth (which results in higher demands) and increased levels of pollution in our river systems are among key reasons why South Africa is facing major challenges with its water quality. But some municipalities and districts are also running out of funds for basic operational requirements, such as chlorine, to treat contaminants in wastewater, while others lack sound management and expertise.

Compounding this problem is the fact that South Africa is a water scarce country, and more prone to shock climate change events such as extreme droughts or floods.

To start turning things around, several key

measures should be adopted, and five of these are outlined below.

## Making engineers great again

Over the years, many municipalities have started to rely more on administrators and finance managers than engineers when it comes to critical water waste management and maintenance issues.

The reasons for this are varied, with some municipalities seeking structural changes or cost savings.

To manage water effectively, we do need to start creating an organisational culture of putting engineers more at the centre of decision making.

These engineers must be of the highest calibre, and should lead administrations on key decisions that will result in the best quality water and required sewage management for an area's residents. Good engineers are like the doctors of our water systems.

## Reporting and consequence management

Having the right engineers in place is only one part of the solution. Another critical component is reporting and consequence management within our municipalities and districts.

With the Department of Water and Sanitation moving to republish the Blue Drop report this year (after it was paused in 2014), this marks a step in the right direction when it comes to reporting, accountability and transparency.

It's important to know that the Blue Drop report is not focused solely on water quality but rather with the overall management of water and waste systems. This means that some areas deemed high risk can be just a few steps away from having unsafe drinking water, while others actually already need to issue red notices or warnings to residents.

This provides a gauge of where underperformance is occurring. More importantly, it

informs government of where it must act swiftly. In instances of neglect, municipal managers should face the consequences, whether it be with fines or even criminal charges. Provincial or national government also then needs to step in and immediately fix problems where local government has failed.

## Smarter use of wetlands

Local research has shown that wetlands can act as additional, natural water filters for our man-made water systems. This is because the plants, soils and even microbes in our wetlands can effectively absorb and uptake many harmful pollutants.

However, this involves a delicate balance as our wetlands also need to be protected in order for them to protect us.

South Africa should take a closer look at ensuring that industry should be more responsible when emitting discharge into rivers. This might require implementing stricter rules regarding the quality

of water that is pumped from industrial processes into the environment.

## Greater attention to funding, supply chains

Local and provincial governments need to realise that allocating funding for water projects is a long-term investment.

It's also important to pay greater attention to supply chains of water maintenance. Purchasing higher quality components or investing more in repairs will go a longer way in ensuring longer term sustainability. We cannot afford to cut corners and there must be zero-tolerance for maladministration when it comes to procurement of quality services and products.

## Better long-term planning

Finally, bringing all of this together is better long-term planning. Our engineers, working together with our municipal managers, need to ensure that there

are long-term plans that seek to improve or maintain high quality water standards for the benefit of citizens.

These plans, such as the building out of new waste water infrastructure, need to be sound enough that they can stretch over several years and potential changes in administrations. We need to become more technocratic as a country when it comes to a precious resource such as water.

If water is life, then we need to do everything we can to ensure that we protect this precious resource so that it doesn't become the next biggest crisis in our lifetime. Together we can be intentional about leaving a legacy of quality water for all, especially the vulnerable communities who are most exposed by the threat of deteriorating water quality.

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# WearCheck acquires Set Point Water Laboratories

CONDITION monitoring specialist company, WearCheck, has brought their sister company, Set Point Water Laboratories into the fold, adding a new division to WearCheck's scientific testing structure.

The water analysis company is now integrated fully into WearCheck, and forms yet another area of expertise along with WearCheck's other services, which include scientific used oil analysis, asset reliability care, transformer oil testing and lubricant-enabled reliability services

Set Point Water Laboratories is ISO 17025:2017-accredited, and tests water from any source – ranging from drinking water to factory effluent, to determine the presence and levels of potentially harmful substances.

Set Point Water Laboratories was established in Johannesburg in 1998 as a minerals laboratory, then known as Set Point Laboratories.

The company introduced water testing in 2013 and expanded with the launch of a Cape Town water laboratory in 2019, achieving accreditation of the Cape Town Laboratory in 2020, and thereafter focusing only on water analysis.

Thelma Horsfield, general manager of Set Point Water Labs, outlines their services, "Our laboratory technicians select the relevant tests for the water sample depending on the needs of the customer. They identify what is wrong with the water and advise customers on possible consequences of using / discarding such water.

"Water analysis is conducted using various accredited techniques such as; photometric, electrometric, colorimetric, gravimetric, ICP-OES, ICP MS and enzyme substrates. These techniques obtain the best possible results in chemical and microbial analysis of effluent/wastewater, drinking water, processed



Here, water lab assistant Andisiwe Gwavu is seen checking balances in WearCheck's Water Laboratory in Cape Town.

water, surface water and groundwater.

"In the case of industrial operations needing to dispose of wastewater into a river system, the sea or even simply down the drain, there are strict by-laws that must be adhered to, outlining the "acceptable" levels of contaminants before

disposal, to prevent possible fines or even prosecution. Our water technicians determine the exact levels of contaminants and advise on acceptable levels for safe discarding.

"Additionally, scope water can be used for dialysis. It is important to note the patients on dialysis have little

to no kidney function. Kidneys help compensate for the higher intake of substances obtained from food and drinks that would otherwise build up in the body. Dialyzing with pure water prevents the exposure of substances/toxins that cannot be eliminated from the body. We are

currently doing some water quality checks for a renal unit to ensure suitability for dialysis

"Irrigation water quality is a critical aspect of greenhouse crop production. Water with high alkalinity can affect nutrients uptake by the plants and cause nutrient deficiency

which compromises plant health.

"Borehole water testing is a popular item with customers who want to know whether the water is safe to use on their garden, to fill the pool, to drink and use in the household. In Cape Town, many boreholes have high salt content, and, after testing the water, some customers have to dilute it with municipal water or put processes in place to remove most of the salts.

"Through WearCheck, our water facilities provide analytical services through an extensive network of operations both in South Africa and internationally" she explained.

*WearCheck Water Laboratories telephone numbers remain unchanged: Cape Town (021) 111 0056, Email: splinfo@setpoint.co.za Web: <https://www.wearcheck.co.za/testing-analysis-water> or [www.setpointwaterlaboratories.co.za](http://www.setpointwaterlaboratories.co.za)*



Clean water is pivotal to industrial health

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# “Hot Air About Gas” – new report seeks to downplay the role of natural gas in the energy mix

**Comment by Robin Hayes**

CAPE Business News has written extensively during the past few months of the potential of natural gas as a

contender to alleviate the crisis in electricity supply that is plaguing the nation.

Space was afforded to the chief executives of the two companies exploiting the gas reserves – Rener-

gen in the Free State and more recently, Kinetiko & African Energy in Mpumalanga, who both clarified the quantity and availability of their respective natural gas reserves – and they

are massive. (See CBN March and June for the full interviews.)

In this issue, the nod was given to gas to power in a statement from the Regional Sales Executive for GE Gas Power Sub-Saha-

ran Africa highlighting the potential of CCGT (Combined Cycle Gas Turbine) power plants (Ready for generation, but who forgot the fuel?) The latest information to hand (20 June) is the release of a new study

report from Meridian Economics entitled: **Hot Air About Gas - an economic analysis of the scope and role for gas-fired power generation in South Africa.** (The full report can be accessed by visiting:

<https://meridianeconomics.co.za/wp-content/uploads/2022/06/Hot-Air-About-Gas.pdf>)

While there is no panacea for our energy woes, the report attempts to make a cast iron case for wind and solar with much detailed information and stats on it being the cheapest energy R/MW, but fails (in

...the Gas Master Plan hasn't yet been updated since 2012, yet is still being used as a blueprint..."

my first reading,) to justify the full cost of renewables which have to include storage if renewables are to become the prominent energy supply of the future. Gas power is somewhat relegated to peak lopping and filling in when the sun doesn't shine or the wind doesn't blow, at least up to 2030. No mention is made of nuclear which to me is the absolute renewable.

### Clutching at straws?

Amid what seems like analysis paralysis from the DMRE (The Department of Mineral Resources and Energy) and the shocking revelation that the Gas Master Plan hasn't yet been updated since 2012, yet is still being used as a blueprint (according to a Department spokesperson due to "a lack of resources" to update the document,) it is hardly surprising that in the absence of a fundamental 'plan', those with a vested interest in energy supply should be punting their particular cause(s).

The energy stage has many players from those such as Andrew Kenny who is a climate change denialist to those who punt wind and solar as the be all and end all.

The Meridian study makes the point: 'Before any decision is taken to procure gas-fired power generation, we therefore recommend that relevant policy documents including the Gas Master Plan and the Integrated Resource Plan for electricity be updated to reflect the true, current reality of the cost of gas, diesel and renewable energy, and the available carbon space.'

Amen to that.



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## GE introduces next-generation 3MW wind turbine

GE Renewable Energy has introduced Sierra, its newest onshore wind turbine platform designed specifically for the North America region. The 3.0-3.4MW turbine features a 140-metre rotor and is offered with a variety of hub heights, including a <500' option. Sierra also includes GE's revolutionary two-piece blade, designed to improve logistics, installation and serviceability. The business has currently received more than 1GW of orders for the turbine platform. Sierra is built on the legacy of GE's 2MW platform, which recently surpassed 30 GW of installed base globally. The Sierra platform launched with two prototypes, one in Lubbock, TX and one in Kamataka, India, with more than a year of successful run time on each. GE's Sierra platform includes a variety of key enhancements, including:



Sierra turbines in New Mexico, USA. Picture credit: Rich Crowder.

- High capacity factor turbines with reduced pads per site (+4 pts capacity factor with 15% less pads needed per 100MW compared to 2MW)
- GE's revolutionary two-piece blade for reduced logistics, improved site installation and improved serviceability
- Simplified machine head & electrical system, built off GE's 2MW platform, including single main bearing, single piece down tower assembly (DTA), external pad mount transformer (PMT) and rail-shippable machine head – supporting ease of installation & serviceability
- Optimized 3 & 4 section towers for ease of transport & installation, including 500' tip height

- 81m tower option
- Crane flexibility, optimized for readily-available 600-ton crane class to reduce cost & eliminate crane supply constraints; single blade & full rotor installation compatible
- Variety of features & accessories to support diverse siting challenges, including bat acoustic deterrent, enhanced corrosion, noise reduction mode and more
- Shared pitch bearing from GE's legacy European platform fleet, with over a half decade of proven field operation
- Serviceability enhancements, including machine head material handling system with 400kg capacity, crane-less repair technology and rear-entry hub accessibility.

## Enel connects Karusa wind farm to national grid

- Karusa wind farm in Laingsburg Local Municipality achieved commercial operation giving the national grid access to an additional 147 MW of renewable energy.
- As part of the Enel Green Power plan for Creating Shared Value (CSV) associated with the construction of the wind farm, actions have been proposed to support the area's employability and empowering local enterprises.

ENEL Green Power South Africa (EGP RSA) has connected to the electricity grid a 147 MW Karusa wind farm, which is located in a remote part of the Laingsburg Local Municipality in the Western Cape, and will be able to generate more than 500GWh annually, potentially averting the emission of approximately 500 000 t/pa of CO2 into the atmosphere. Karusa features the Vestas V136-4.2MW

wind turbines, the largest on the African continent to date.

Awarded to Enel Green Power in 2016 as part of round four of South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), the wind farm is supported by a 20-year Power Purchase Agreement with South African energy utility provider, Eskom.

With Karusa wind farm operational, EGP RSA now has six wind farms up and running, including Nojoli (88 MW), Oyster Bay (148 MW), Nxuba (148 MW), Gibson Bay (111 MW) and Garob (145 MW), with its Soetwater (147 MW) wind farm also expected to achieve commercial operation during July 2022.

Collectively, the company has 10 operational wind and solar projects in South Africa. Once all current projects are in operation, the business will have an overall installed capacity of 1.2GW.

Manuele Battisti, Country Manager of EGP RSA, says construction of the Karusa facility commenced in 2019 and amounts to a €200-million investment in South Africa.

At the peak of the construction process of Karusa and Soetwater, the business had 1 160 employees on site.

EGP RSA is currently engaged in empowering local SMMEs through its Enterprise Development Support programme. This could include support in the form of funding, income generating assets (equipment), skills development and market linkages, amongst others.

Other Socio-Economic Development projects focusing on education, healthcare, social welfare and skills development will be implemented now that the project is operational.

In addition, a community needs assessment will be conducted to identify the most pressing community needs and pinpoint any skills gaps.



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Diesel Electric Services (Pty) Ltd has been involved in the design, manufacture, delivery, installation, commissioning, service, maintenance and associated repairs of Turnkey Power Infrastructure Solutions in Cape Town since inception in 1993.

As the installation basis has grown, the need was noted to implement local foot print development with Cape Town based installation and service capability.

Diesel Electric Services is product agnostic, with speciality of scope from medium voltage consumer substation connections to large power distribution on low voltage.

The power solutions include, but is not limited to industrial plants, process plants, commercial developments, data centre applications and financial institutes. This includes for the design and implementation in Greenfield sites as well as infrastructure upgrades in existing facilities, taking into consideration the importance of uptime to the end user.

Load testing includes for the supply of either reactive load banks or resistive load banks or, in some instances a combination of both.

In house capability include for regulatory approval associated with environmental impact assessments as well as fire department registration. To assist with the local requirement with regards to regulatory approvals, an in-house fuel containment system was development which varies between a two hour and four hour fire rating. This is engineered in accordance to client specific requirements.

Staff employment consists of **550 full-time staff**, separated into many teams, and managed by competent supervisors and managers, i.e. Sales, Contracting, Manufacturing, Installations, and Technical Support etc. This ensures a first-class, quick and reliable response to any possible client request or need.

The service department boast a staff compliment of 71 field technicians and 22 employees to assist them with the administrative side fully conversant in pastel and issuing of quotations.

Manufacturing facility is in the excess of **50,000 square meters** of working space. At present there are two panel shops where manufacturing is taking place in excess of **8,500 square meters**. These panel shops are fully equipped for basic sheet metal work, busbar bending and in house programming of different control interface solutions offered to customers.

Diesel Electric Services Conventional Distribution Board design (from Form 1 to Form 4) has been approved by NETFA as fully type tested to IEC 60439-1 and 61439-1, and furthermore, specially type tested to a 70kA fault rating on both the main busbars and distribution busbars. It is to understand that D.E.S. is the only board manufacturer to have successfully tested to this rating on both sets of busbars.

The CIDB creditation includes for an 8EB, 8EP (Electrical) and 7ME (Mechanical) CIDB rating, proving excellent abilities to perform in the industry, and currently the process of applying for an 8ME rating testimony to our mechanical capabilities and associated achievements.





For more information about our product delivery and solutions, visit our website: [www.dieselelectricservices.co.za](http://www.dieselelectricservices.co.za)

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# Kinetiko reports “Sizable exploration opportunities”

NATURAL gas exploration JV, Kinetiko and African Energy have reported promising natural gas finds from its Korhaan project wells, located in the Amersfoort district in Mpumalanga. (See CBN June edition – ‘More gas, less talk, more action’.)

## A company statement quotes:

### Korhaan project well summary

All the Korhaan Project holes were percussion drilled to intersect carbonaceous sandstone and coal geology at depths that ranged from 130 metres to 450 metres.

The wells are conventional and have unsophisticated completions as they are open holes that test the entire sub-karoo section and have

successfully flowed low pressure gas.

The Korhaan well project is within the Ermelo Coalfield.

Gas exploration has focused on coal sandstones, coal and other carbonaceous structures at depths of 130 metres to 450 metres.

### Korhaan-3

Korhaan 3 was tested during May 2022 and had a successful series of multiple flows and shut-in periods.

Encouragingly, each period showed an increase in both flow rate and build-up pressure, proving its placement within a large compartment with rapid recharge functionality.

The last flow period produced very high-quality gas (~98% methane, 2% nitrogen and zero CO<sub>2</sub>) at a sus-

tained rate of over 92 Nm<sup>3</sup>/hour (83 mscf/d – Million standard cubic feet per day) gas flow with a shut-in pressure build-up of over 12 bar.

### Pilot production potential

Kinetiko is planning to enter a pilot production phase in the near future with highly experienced gas-to-power partners Vutomi Energy (Pty) Ltd.

This programme entails using existing wells at Brakfontein to produce gas to an in-field, containerised generator linked to the existing grid running through the farmlands.

The first phase of commissioning and testing will be undertaken targeting 1 megawatt of output.

Further phases are planned for the upgrad-

ing of the conductors and transformer to enable a scalable modular system increased output to 5 megawatts.

Kinetiko is in ongoing discussions with additional multiple mid-stream customers.

There is an increasing and urgent need for LNG to thermal industries and transportation, urea for fertilisers, ammonia for mining applications and the domestic market is becoming increasingly attracted to the potential for gas sourced from within Kinetiko fields.

Said a company spokesperson: “The company is focused over the next three months on achieving major milestones by securing our first domestic gas customers and booking maiden gas reserves certification.”

# Ready for generation, but who forgot the fuel?



Typical GE combined cycle gas turbine (CCGT) power plant.

## By Robin Hayes

AMID our continuing electricity crisis – we’ve been load shedding for 14 years now – it’s taken ten years for DMRE (The Department of Mineral Resources and Energy) to update its gas masterplan – and it’s still not done – to recognise that natural gas has a vitally important and significant role to play in South Africa’s energy security.

This is despite the timely construction of the ROMPCO pipeline back in 2004 to transport natural gas 865km from the Mozambique Pande-Temane gas fields to Sasol’s Secunda plant in Mpumalanga and onward to Johannesburg, Ekurhuleni, Pretoria, Sasolburg and Emalaheni (Sasol pipelines) and Durban, via Transnet’s Lilly pipeline.

Despite this, the lack of infrastructure and LNG (Liquefied Natural Gas) import facilities is a major inhibitor to the development of the gas industry in South Africa, notwithstanding substantial exploitable gas finds both on and off shore by private energy companies. (See CBN March and June editions.)

### Ankerlig and Gourika confirm turbine reliability

It was clear when Eskom built the Ankerlig (Atlantis) and Gourika (Mossel Bay) OCGT power plants in 2007/2008, that due to the inherent fuel flexibility of the turbines to run on diesel or natural gas, meant a switch to one or the other was inherently possible, providing of course that there was a plentiful supply of fuel ...

Then as now, the supply of cheaper, cleaner burning natural gas has

never arrived.

However, changes to the energy landscape which allows private companies to generate power and the adoption of wheeling – where power is generated in one place and consumed in another, using the Eskom transmission network – provides a new opportunity for gas to power generation.

Instead of placing the generating plant where the power is intended to be consumed, place it where there is a plentiful supply of fuel and that means the gas fields in Mpumalanga and the Free State.

This could be one answer to the energy starved Metros such as Cape Town who have vowed to abolish load shedding for their residents.

### The case for gas

During the recent Enlit Africa conference in Cape Town, where viable solutions to scale up Africa’s energy systems were discussed, Nosizwe Dlengeze, Regional Sales Executive for GE Gas Power Sub-Saharan Africa, spoke at the keynote session, stating, “The energy transition remains the greatest uncertainty for the power sector today – the need to simultaneously balance affordability, reliability, and sustainability. Gas will play a critical role in the energy transition by complementing the renewables growth and supporting grid reliability.”

Gas is not only increasingly abundant and affordable, but it offers the opportunity of conversions toward net-zero goals through hydrogen and carbon capture, utilization, and sequestration (CCUS) technologies. For example, GE’s HA gas turbine portfolio is one of the largest and the most effi-

cient gas turbines in the world, with record levels of more than 64% combined cycle efficiency, fuel flexibility, and the capability to transition from gas to low-carbon fuels, such as hydrogen.

Natural gas-fired generators have the lowest CO<sub>2</sub> emissions of all fossil power generation fuels—a natural gas-fired combined cycle plant has roughly 67% of the CO<sub>2</sub> emissions of a similarly-sized coal plant, and lower emissions levels for other pollutants such as mercury, NO<sub>x</sub>, SO<sub>x</sub> and particulate matter. For African countries reliant on coal power, the growth of high efficiency combined cycle gas-fired power generation will support both coal-to-gas transition and accelerate renewables penetration by enhancing the reliability and stability of the energy grid.

“We need to create an energy environment in Africa that fosters industrialization while meeting global and country climate change targets. For GE, gas and renewables is the most viable solution to make substantive reductions in emissions quickly,” states Dlengeze.

So with a build time similar to that of wind and solar installations – Ankerlig and Gourika were completed in just over a year – and the ability for a single station to generate on a continuous basis more than 1 500MW, our current energy shortfall of +/- 10 000MW could be addressed by building five or six CCGT stations in short order, especially if they were constructed on known gas fields.

Seems like a no-brainer especially as we now have on-shore natural gas deposits in enormous quantities in Mpumalanga and the Free State...

# Vestas introduces the V163-4.5 MW, - improving wind park performance and stability in wind power

TO support the projected growth and increased penetration of renewables in the global energy mix, Vestas is introducing the V163-4.5 MW, expanding the Vestas 4 MW platform and offering superior wind park performance in medium to low wind conditions.

The V163-4.5 MW features an 18 percent increase in swept area and delivers up to ten percent higher Annual Energy Production (AEP) at park level compared to the V150-4.5 MW depending on site-specific conditions. With 80.1m blades, the V163-4.5 MW has a large rotor-size-to-rating ratio resulting in a higher capacity factor and an increased power output at medium and lower wind speeds when demand for renewables is high. Furthermore, temperature operation is increased by four degrees compared to the V150-4.5 MW. This leads to improved production predictability and stability with the potential to increase the value of energy.

The V163-4.5 MW is globally applicable, although it is particularly relevant for sites



in the USA, Latin America, South Africa and parts of southern Europe. The exceptionally high and stable energy production at park level, paired with a well-established global supply network, enables an accelerated build-out and wind penetration on sites beyond the usual ideal wind conditions.

The new variant underlines the scalabil-

ity and the modularisation approach applied across Vestas’ wind turbine platforms, as it shares most major functional and physical designs across modules with the V150-4.2 MW and the V150-4.5 MW. Building on more than a decade of continued evolution of Vestas’ 4 MW platform, the V163-4.5 MW benefits from the quality, efficiency and scale of

an established global supply chain optimised over the last ten years. From the outset, the V163-4.5 MW has been designed to minimise the impact of changes on suppliers, transportation methods, tooling and installation processes, as well as servicing and operational standards.

For more information visit: [www.vestas.com](http://www.vestas.com)



## No remedy without accurate diagnosis: keeping healthcare costs down in SA

By Ruth Rehbock

SOUTH Africa currently faces a major crisis in its healthcare sector. With a population of around 60 million recent stats says there is only 0.39 doctors for every thousand people in the country. This compared to places like Brazil and Mexico, where they often have more than two doctors per thousand and individuals.

Craig Comrie, CEO of Profmed medical scheme, says that costs in the sector are based on curative, hospital-based services. "Mostly costs entail emergency healthcare or care for those in significant and severe illness stages of their lives," he adds.

In addition, the price of healthcare rises above inflation however costs can't be kept low because people need care more often and the burden of disease is now affecting a growing number of younger people. In the private sector medical scheme costs increase every year which average to be about three or four per cent above inflation. These costs are driven by technology, fewer skills and the burden of more people utilising healthcare more. "The way to reduce healthcare costs is that you need to keep people healthier for



Craig Comrie, CEO of Profmed.

longer," says Comrie.

"In the public sector, the lack of doctors and of suitable healthcare facilities does not mean the healthcare budget grows, it means that the queues grow and keep growing, so finding a doctor or a nurse becomes very difficult," he adds.

Up until now the Department of Health had not increased their expenditure in the last few years. "The budget gets divided among the nine provinces, and so there needs to be careful management so the money is used efficiently and effectively in the healthcare sector.

"For one thing, there

aren't enough medical graduates to adequately staff hospitals in both the private and public arenas, an issue that I feel could be tackled by involving the private sector. Hospital groups, for example, could be given the freedom to train and place medical professionals to fill the rising demand."

Another major issue is that many young graduates are not being placed in hospitals or other environments to complete their community service. Government has to find enough money to fund as many placements of young graduates as is necessary.

Keeping healthcare costs low in SA means Government and the private sector must take adequate measures to keep medical professionals in the country. SAMA, who look after 12 000 of the many doctors, made a statement that if the National Health Insurance becomes a reality, 40 per cent of doctors said they would leave the country.

It's imperative that we train enough medical personnel to meet the needs of a large and growing population as the fewer doctors there are, the more they can charge for their services privately. While in the public sector fewer means the public does not get access to the healthcare it needs.

Although SA has to acknowledge that the global market is hungry for newly trained nurses and doctors, particularly since the Covid pandemic ravaged many countries (significant numbers of professionals took early retirement while others were lost to the virus itself), we have enough resources, technology and know-how, to vastly improve our healthcare system at home.

For further information contact: [craigc@prof-med.co.za](mailto:craigc@prof-med.co.za)

## PPE leader goes solar



Solar array underway at Pienaar Bros, Paarden Eiland.

PIENAAR Brothers (Pty) Ltd - a national leader in PPE for over 60 years recently made the decision to go off the grid and to become completely reliant on solar energy at their head office in Paarden Eiland, Cape Town. After years of rising electricity costs - with annual price hikes now sitting at around 20% - going the solar route made the best financial sense.

The Western Cape enjoys high solar radiation levels with peak sunshine hours, averaging nearly five hours a day, making the transition from Eskom power to solar move a logical choice. The engineered design is a turnkey solar PV system with full battery back-up, projected to save around 70-80% of Pienaar's energy costs while completely eliminating down time during the multiple load shedding periods.

The saving and the ability to continue working, while difficult to quantify precisely, is regarded by the company as substantial. The system requires

little maintenance over its projected lifespan of between 15-20 years.

The solar PV rooftop array is designed to maximise usable sun hours and the solar panels themselves are rated level tier 1 and have a design lifespan of 25 years.

Remote monitoring and control of the system is done by the service provider so as to ensure optimisation of the system at any time. All commissioning and registration with the local authorities was done by Solar Solutions Engineering SA (legal requirement in SA) which ensures compliance with all the regulatory bodies.

Lithium-ion battery storage is used to capture the free excess solar power produced during sun peak hours and is an essential insurance against constant load-shedding or power outages. As a responsible and an ethical business, the decision to go solar will ensure continued productivity while protecting the environment and substantially

reducing its carbon footprint over the coming decades. Pienaar Brothers is dedicated to looking after the earth for the future generation.

Pienaar Brothers is a Level 1 BEEE contributor and has 11 branches throughout the Northern, Western, Southern and Eastern Cape and KZN; located in Cape Town (Head Office), with branches in the Cape Winelands, Worcester, Saldanha Bay, George, Mossel Bay, Port Elizabeth, East London, Durban, Kathu and Upington. It has close channel partner distribution relationships with many of the best international and local PPE manufacturers and therefore is able to provide internationally renowned premium PPE products at the most competitive prices from; 3M, Profit, Bova, LeMaitre, Wayne, Neptun, Uvex, Honeywell, DuPont and CATAPILLAR amongst others.

[www.pienaarbros.com](http://www.pienaarbros.com)  
[/www.pienaarbrothers.co.za](http://www.pienaarbrothers.co.za)

## 5.5 million injury-free man hours in sight

DEKRA Industrial continues along its successful safety trajectory, leading by example regarding safety in the workplace.

In March 2021, the company achieved 5 million serious injury-free man hours of operational safety, and is now moving steadily towards its next target.

Carina Kleinhans, Dekra Industrial's

Health, Safety and Environment (HSE) Manager, explains: "It was a major achievement for us to reach 5 million serious injury-free man hours in March last year, thereby achieving a goal which the company has been working towards for many years.

We are very pleased with this achievement, as it shows real commitment from the

entire workforce, led by our executive management team.

We are now working towards 5.5 million serious injury-free man hours, which we hope to attain in early 2023."

Dekra Industrial Managing Director Johan Gerber adds: "Being able to present this excellent result to our clients allows them to see that - across the company - we

'live' and practise our stated objectives when it comes to safety, thereby ensuring the well-being of all our employees and valued clients.

This also shows that when our Dekra Industrial team members are on-site at our clients' premises, we are in turn also supporting their safety-related goals, policies and procedures, and 'walking our talk'."

Dekra Industrial's commitment to entrenching a culture of safety is further highlighted by its current results in the NOSA (National Occupational Safety Association).

"The recent NOSA ranking reflects our highest ever, with a score of 97.48," clarifies Kleinhans. "These audited NOSA results are very pleasing, as we improve on our

score every year. We believe this is testimony to our management commitment, our systems and procedures, our employees' understanding of what is expected, and our ongoing efforts to provide clear and understandable communications regarding safety."

"Dekra Industrial has consistently improved its NOSA results since 2013,"

adds Gerber, "and I commend all our employees for their ongoing commitment to the critical pursuit of safety in the workplace.

Combined with our steady progress towards the landmark of achieving 5.5 million injury-free hours, we continue to put safety first as dedicated 'Heroes of Safety' in industry," he concludes.




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## Tackling burnout: How to deal with stress and safety in the workplace



The WHO labelled chronic workplace stress 'burnout' two years ago. Elisa Ventur/Unsplash

By Kristen Deuzeman, Industrial/Organizational Psychologist, Northern Alberta Institute of Technology

WHEN I began working in disaster and emergency management, there was a funny anecdote suggesting the job was 98 per cent paperwork and two per cent adrenalin.

Organizations must address environmental risks by encouraging movement, breaks and getting sunlight.

Looking around at my office environment, I failed to see much adrenalin. To make sense of this, I researched some major disasters and discovered that when they strike, emergency managers transition to working in emergency co-ordination centres. These nerve centres often look like something out of the movies, with people staring intently at their computers while large screens everywhere display critical information.

### Exhaustion follows exhilaration

While short-term workplace stress is to be expected, the problem emerges with long-term sustained stress.

As Hungarian scientist Hans Selye described in 1950 in his seminal general adaptation syndrome about workplace stress, after sustaining a period of exhilaration, stressed employees eventually reach the exhaustion phase and can no lon-

ger sustain additional pressure..

In 2019, the World Health Organization identified a syndrome it labelled "burnout" resulting from chronic workplace stress. Now people who report feeling depleted of energy or exhausted, mentally distanced from or cynical about their jobs and experiencing problems getting their work done can be diagnosed with a workplace injury.

Burnout as the result of workplace stress carries significant implications for employers. Canadian occupational health and safety standards require employers to protect the physical and mental health of their workers. If people are meeting the criteria for burnout, organizations may be neglecting their legislated duty to ensure psychologically safe workplaces.

### Preventing, mitigating stress

The good news is something can be done. While it will require genuine organizational commitment, prevention and mitigation are key. But to get at the heart of the problem, we must first ask if employers are even tracking psychological safety in the workplace.

Of those that do, most merely encourage staff to exercise more, meditate, sleep better and eat a more balanced diet. This is, quite simply, passing the buck onto an already depleted workforce and does nothing to address the core of the problem. The answer is not to recommend Band-Aid solutions, suggesting employees try even harder in their downtime to compensate for organizational neglect.

For meaningful change, organizations must first implement clear policies reflecting their commitment to workplace mental health and psychological safety, and appoint a wellness champion and leaders who model these values.

The next step is identifying workplace hazards through employee engagement surveys, workplace risk assessments, incident investigations, exit interviews and disability claim data if available. Identifying controls to prevent psychological harm is also necessary.

### Respectful workplace policies

Once hazards have been identified, prevention and mitigation measures must follow. Organizations must define and train employees on their duties and responsibilities, monitor workload, consider flexible work arrangements, clearly communicate priorities and ensure respectful workplace policies are understood and that managers who defy them are held accountable.

Organizations must address environmental risks by encouraging movement, breaks and getting sunlight. Finally, documenting and reporting hazards as a measure for ongoing program development is necessary because it helps inform company policy as part of holistic continuous improvement efforts.

*This shortened article was first published in The Conversation. To read the full article visit: <https://theconversation.com/tackling-burnout-how-to-deal-with-stress-and-safety-in-the-workplace-161852>*

## Dealing with fire risk in a mining environment

MINING vehicles such as excavators, haul trucks and even drag lines are high-value assets that operate in arduous conditions where there is a high fire risk. This means that pre-shift and weekly inspections on mining vehicles are essential to ensure that the fire prevention system is in good working order.

"We can assist mining operations to mitigate any risk posed by fire, which affects productivity and profits," says ASP Fire CEO Michael van Niekerk. The fire engineering expert designs systems to suit individual vehicles and their specific requirements. This means examining the conditions not only inside the vehicle, but also within the surrounding environment.

The design and installation of a vehicle fire-protection system requires that mining vehicles are subjected to a Hazard Identification and Risk Assessment (HIRA) of potential fires. Each vehicle needs to be assessed carefully within its specific operating environment to understand what hazards and fire risks to which the vehicle is exposed.

Inherent fire risks include the turbochargers and brake system overheating, as well as high-pressure hydraulic systems and electrical equipment that may ignite a combustible or flammable component of the vehicle.

Although Dry Chemical Powder (DCP) extinguishers are highly effective in firefighting, they offer minimal cooling properties. This results in re-ignition of flames, especially in liquid fuel and rubber fires, thereby increasing the risk of property damage and loss of life. The powder inside DCP extinguishers can also compact due to vibration when placed on a moving vehicle.

The compacted powder increases the risk of malfunction when activated. As a result, DCP extinguishers placed on mobile equipment need to be serviced more frequently. DCP extinguishers also pose serious operator and environmental hazards. When used in confined spaces, they can affect the fire respondents' visibility and capability to effectively suppress the fire, or to safely evacuate an area should the fire spread out of control.

A much more effective and 'greener' solution is water-mist handheld fire extinguishers. Utilising water as the main agent and nitrogen as a propellant, these can extinguish most types of fires, including rubber and plastic, diesel and petrol fires, and electrical fires rated up to 245 kV.

### Identifying and addressing barriers for PWD

Whether physical or mental, noticeable, or 'invisible', equity acknowledges that people are different, while narrowing the impact of differences in the workplace in

electrical equipment that may ignite a combustible or flammable component of the vehicle.

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fires, and electrical fires rated up to 245 kV. The atomised mist generated by the extinguisher increases the surface area of the water by more than a hundredfold. The micro-droplets rapidly turn into cold steam when meeting burning or very hot materials, further increasing the surface area by 1 600 times. The endothermic reaction effectively cools down any hot surfaces in the immediate environment.

Not only is the fire extinguished, but any hot spots also cool down without any thermal shock. The thermal heat radiation barrier created allows the operator to approach the fire without sustaining burns to deploy the extinguisher. A

protection mechanism eliminates any false alarms. This consists of a heat-sensitive pressurised activation tube that requires heat to rupture and open a differential valve on the main cylinder to activate the system. Another solution offered by ASP Fire is an Aqueous Film Forming Foam (AFFF) for fire-extinguishing and vapour suppression of hydrocarbon fuel fires. The AFFF blanket blocks oxygen supply to the fuel and cools any hot flammable liquid by effectively sealing the surface.

### Legislative framework for inclusion

Although reasonable accommodation is legally mandated, most workplaces are still inaccessible for PWD because people



Michael van Niekerk.

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For more information contact Michael van Niekerk, Tel: (011) 452 2169, Cell: 083 779 1701, Email: [michael@aspfire.co.za](mailto:michael@aspfire.co.za) Web: [www.aspfire.co.za](http://www.aspfire.co.za)

## Misconceptions on disability in the workplace

By Daniel Orelowitz, MD of Training Force

THE national disability prevalence rate is 7,5% in South Africa, and yet despite this, having a disability is not readily accepted as a normal part of workplace culture. While legislative protection in the workplace for persons with disabilities (PWD) is a good starting point, actually putting the principles of employment equity into play isn't clear cut.

### Identifying and addressing barriers for PWD

Whether physical or mental, noticeable, or 'invisible', equity acknowledges that people are different, while narrowing the impact of differences in the workplace in

sensitive and practical ways that enable persons with disabilities to integrate effectively and deliver value to the organisation they work for. Stemming from the traditional medical definition of disability, there exists a misplaced emphasis on an individual's condition and the limitations they may present. Significant barriers to accessibility in the workplace for PWD are usually attitudinal, organisational, architectural, technological and include a lack of adequate information and communication.

### Legislative framework for inclusion

Although reasonable accommodation is legally mandated, most workplaces are still inaccessible for PWD because people

fail to understand the extent and methods of handling reasonable accommodation within the workplace. Many employers mistakenly assume that reasonable accommodation will come at a great expense, when in fact many accessibility measures can be implemented easily and at minimal cost. Skills development is one of the most effective tools available to empower an individual by becoming economically active. Investing in on-going education and training opportunities is essential to close the skills gap and grow the economy.

### Creating the right opportunities

Interestingly, the Employment Equity Code of Good Practice on Employment of Persons with Disabilities,

South African organisations is mandated to spend 0.3% of their wage bill on skills development for disabled employees as part of their BBBEE Spend on their scorecard. While certain disabilities might exclude individuals from working in certain jobs, purely from a practical perspective (for example, someone in a wheelchair isn't necessarily suited to working at heights), businesses need to realise that disabilities do not prevent people from excelling in other roles if given the right opportunity and the right skills development training.

### Facilitating real change

Here, training providers can play a pivotal role in connecting PWDs with employers in a manner that addresses stigmas attached to disability.



## Agri on the rise?

**Comment from Mr Jacques Moolman, President of the Cape Chamber of Commerce & Industry**

THE Chamber of Commerce welcomes news of an agricultural revival in the Western Cape where the most recent employment figures show a significant improvement.

Total employment in the sector increased 49,8% in the first quarter of 2022 compared with the corresponding quarter last year -- an increase largely explained by the economic recovery following last year's strict Covid-19 lockdowns. Figures also show a significant increase in the number of people employed in agri-processing, which is a sure sign that the

sector is back on track.

The Chamber also commends efforts to increase exports into the African market via the Provincial Department's new Africa Agricultural Strategy. Already about 41% of African agricultural imports come from South Africa -- and this percentage seems likely to grow according to provincial Agriculture Minister Dr Ivan Meyer who visited the Chamber earlier this month.

What is clear is that agriculture is leading the Province's economic recovery despite ongoing challenges.

This success illustrates the agricultural sector's immense employment potential, and we appeal to all tiers of government to remove remaining

obstacles to growth, such as ongoing transport challenges.

Fortunately there appears to be encouraging progress at the Port of Cape Town, where stakeholder collaboration has eased congestion and infrastructure backlogs.

Other welcome news includes the upgrading of the Provincial Veterinary Laboratory and extension of the Department's MOU with commodity organisations. Both initiatives should further strengthen a sector that lies at the heart of the Western Cape economy.

The Chamber looks forward to facilitating ongoing engagement between all agricultural stakeholders with a view to maintaining the positive momentum.

## Agri SA partners with Motsepe Foundation to drive commercial partnerships

AGRI SA has launched of two pioneering projects in Limpopo and Mpumalanga to boost the sector's transformation efforts. The projects are the culmination of a joint initiative with the Motsepe Foundation to reimagine development funding and foster greater collaboration to accelerate the inclusivity of the agricultural sector.

The Motsepe Foundation and Agri SA, through its subsidiary Agri Enterprises, have identified access to capital as a key constraint facing projects with real potential to support and advance emerging farmers.

Due to legal and tax requirements and because of the commercial nature of these projects, the Motsepe Foundation facilitated approximately R70 million of funding for the first two projects through a company established by the Motsepe family.

The first of the projects supported in the current phase of the initiative will be the joint



ventures established following the successful Greater Tenbosch land claim in Mpumalanga. Three ventures have been established to cultivate cane on this land which has to date suffered from a lack of funding. A crucial partner for this project has been consumer goods giant RCL Foods, which is currently the sole funder of the joint ventures.

The second project, Majeje Citrus, will be in partnership with the Majeje Traditional Authority which occupies land still owned by the state, despite the recognition of the

community and its chieftaincy. In partnership with Komati Fruit and ABSA, the community has set up Majeje Citrus. With the support of Agri Enterprises and the Motsepe Foundation, the community will now be able to develop its land and participate in the cultivation of South Africa's most thriving agricultural commodity.

The first two projects of this initiative will create and maintain 1 541 jobs (seasonal and permanent) -- and will impact on 5 705 livelihoods.

Agri SA is confident that the partner-

ship with the Motsepe Foundation will provide a new and vital model for the support of forward-looking, private sector-led initiatives aimed at promoting inclusivity in the agricultural sector. It is intended that this innovative approach to development funding will be rolled out to more projects in the current phase.

*For further information contact: Omri van Zyl, CEO, Agri SA Enterprises, Tel: 082 417 5724 or Christo van der Rheede, Executive Director, Agri SA, Tel: 083 380 3492.*

## Farming for the Future

WOOLWORTHS is proud to have a range of indigenous plants, including fynbos and fruit trees, as part of its horticulture range. But rather than being produced by a large commercial supplier, these plants are grown for us by a small Western Cape enterprise that literally started as a back yard business.

In 2001, Jacky Goliath and Elton Jefthas turned Elton's back yard in Kylemore, outside Stellenbosch, into a nursery. With their knowledge of

local fynbos, they chose three different species to start, and called themselves De Fynne Nursery.

As part of our enterprise development initiative, Woolworths supplied a loan to assist their fledgling operation, as well as ongoing technical and business support. Over the years, Woolworths has extended De Fynne's range to include various species of fynbos, Spekboom, fruit trees, blueberries and lavender. De Fynne is also

part of Woolworths' pioneering Farming for the Future initiative. Today the nursery employs some 25 people and produces about 600 000 plants per year on just 1.5 rented hectares. In 2012 Jacky won first prize in the Plant Stand Exhibition organised by the Cape Green Forum in Stellenbosch and Jacky has been recognised and awarded both nationally and internationally as an entrepreneur in the commercial and agribusiness sector.



## Recent Q1 2022 GDP and Job Numbers confirm that WCDoA is pushing forward

COMPARED to Q1 2021, recent Q1 2022 gross domestic product (GDP) and employment numbers confirm that Western Cape agriculture is pushing forward.

StatsSA GDP numbers show that South Africa's (RSA) economic performance in the 1st quarter of 2022 grew by 1.9% quarter-on-quarter (q/q) and 3% year-on-year (y/y).

The GDP growth in the 1st quarter of 2022 was driven by the positive performance in eight of ten industries.

This includes agriculture which increased by 0.8% (q/q) and 3.6% on a (y/y) basis due to the substantial contribution of the horticultural sector.

The Western Cape province is the dominant player in the horticultural sector. The observed real gross income growth highlighted the deciduous and other fruit, vegetables, and subtropical fruits as the top three performing products. Moreover, in terms of annual growth rate, the subtropical

fruits showed a positive increase of 16% in value terms, followed by tea, vegetables and dried fruits which increased by 14%, 9% and 7%, respectively.

StatsSA's recently released Quarterly Labour Force Statistics (QLFS) highlights that the Western Cape Province had overall positive employment growth of 1.5% (33 207) (q/q). At the same time, the provincial agricultural employment numbers show a significant increase of 49.8% in the first

quarter of 2022 (y/y).

A total of 67 581 primary agricultural jobs were created in the 1st quarter of 2022 (y/y).

The agri-processing employment numbers increased by 13 647 in the 1st quarter of 2022 (y/y).

Over the past two years, agriculture's strong growth has driven job creation within the WC agricultural sector.

These figures confirm that despite C19 and the severe drought, agriculture is resilient in the WC.

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## Ginger beer creates a fizz



Mpho Mohaswa.

**FIRSTWATCH** Entrepreneur's Challenge winner Mpho Mohaswa has been extremely busy since taking the grand prize in 2019. Her product, Ghemere Ginger Beer, gained major popularity during the 2020 and 2021 lockdown period. And now, Mpho is branching out even more, taking her product to resellers around South Africa with the support of the Firstwatch brand right behind her.

Mpho comments, "So much has happened since the challenge and we are really happy with the progress we have made thanks to Firstwatch. Through the chal-

lenge we gained media backing which helped us pick up a lot of interest from new customers. Our product is currently available on Takealot.com, in selected Food Lovers' Market stores and via our website www.preciousandpearl.com. We have also expanded our footprint even more with our Ghemere Edition Gift Pack in partnership with Firstwatch Whisky. These special gift packs are available in Makro stores nationwide."

Mpho is a chemical engineer turned entrepreneur who founded Precious and Pearl Brands, the home of Ghemere Ginger

Beer. In the creation of her all-natural, traditional beverage, Mpho set out to maintain the nostalgic, traditional authenticity of South African ginger beer.

Ghemere is a non-alcoholic ginger beer, available in concentrate or ready-to-drink bottles.

"Being associated with a big brand like Firstwatch has opened doors for us, lending more credibility to our brand and considerably elevating our brand visibility. Our increased production output has allowed us to focus on expanding the business and we can't wait to take Ghemere to more South Africans around the country."

Since 2019, the beginning of her whirlwind entrepreneurial journey, Mpho has achieved several milestones, including being granted a food safety certificate for her product, engaging with multiple major retailers, negotiating product placement in-store and gaining a loyal customer base online and through word of mouth.

To find out more about the First Watch Entrepreneurs' Challenge and the winners of the 2022 competition, visit <https://firstwatchwhisky.co.za/>

## Stellenbosch Hills unveils long-awaited 2022 vintage of Muscat de Hambourg

Rare and unique Limited Release collector's item flaunts a new look

NOW available is the latest vintage of the well-known winery's rare Muscat de Hambourg, a collector's item as the only fortified wine of its kind in South Africa. Released exclusively in truly exceptional vintages, the wine was last available in 2020.

Stellenbosch Hills is just one of two commercial South African producers of the Muscat de Hambourg variety, but the only winery to bottle it as a single cultivar wine. The vineyard that produced it was originally planted in 1987 but had to be replaced in 2001. Today, the trellised vines cover less than one hectare.

Highlighting its exceptional quality and heritage, the winery released this latest edition with a brand-new sophisticated look. A new label communicates the sensuality and mystique of the wine and, now in clear glass that shows the magnificent sunset colours contained within.

This Stellenbosch Hills Muscat de Hambourg hails from the 2022 vintage that stood out for its cooler night temperatures, which enhanced flavour and colour in the resulting wine.

In glass, it is intensely fragrant with aromas of candy floss, boiled sweets, rose petals and violets. These tumble onto the palate in delicious balance and through to a long, satisfying and velvet finish.

The wine is perfect as an aperitif or after-dinner drink, served at room temperature in winter. It is equally tasty when presented over crushed ice, or vanilla ice cream and strawberries.

Originally developed in Germany, Muscat de Hambourg is a cultivar derived from a cross of Muscat d'Alexandrie and Frankenthal. Stellenbosch Hills makes the wine in a Jerepigo style, which means fortifying the unfermented grape juice to create a memorable



The Stellenbosch Hills winery and tasting room is located at the intersection of the R310 and Vlotenburg Road, just outside Stellenbosch.

experience-in-a-glass.

The Stellenbosch Hills Muscat de Hambourg 2022 sells for R110 and is available through the winery's online shop, from the tasting room and selected fine wine outlets, countrywide.

For more information, visit the website, call 021 881 3828/9 or, email: [info@stellenbosch-hills.co.za](mailto:info@stellenbosch-hills.co.za).

Also find Stellenbosch Hills on Facebook (StellenboschHills), Twitter @STBHills and Instagram @stellenbosch\_hills.

## The wonderful world of gin!

GIN has created its own category as that of the celebratory drink - from a spirit that was born in the 11th century to what is today, it's safe to say, it has made a mark.

Gin originated as a medicinal liquor made by monks and alchemists across Europe predominantly from the south of Italy and the Netherlands. As this 'medicine' was being distributed, it gained in popularity and has become one of the most sought after commercial spirits.

So gin does not originate in England? Nope. It was actually the Monks of Solerno, Italy who infused juniper berries with their wine tonic to combat chest ailments. Then, in the 16th century, the Dutch started producing a genever (jenever) spirit which was a malt wine spirit infused with juniper berries to mask the harsh taste.

In the late 1600's William III of England, who was a Dutchman, became king of Eng-

land. And of course brought with him his treasured genever. From what history tells us, the English were too drunk to pronounce genever and shortened it to 'gen' and seems its all downhill from there.

### So what makes gin a gin?

The juniper berry. Yes one botanical. It's worldwide regulation that if the spirit tastes and smells like the juniper berry, it is classified as a gin. Lets backup a little here.

### How many botanicals can be used in a gin?

As many as you like, as long as the botanical recipe contains the juniper berries. There are gins with as many as 1 botanical and some with 47.

### So what are botanicals?

Herbs and spices, flowers, fruits, nuts and vegetables. Anything that can be infused into

the spirit. We call them botanicals as a collective word.

### What are the most common botanicals in a gin?

Juniper, coriander, angelica, lemon, orange, orris root, cardamom, licorice, cassia bark and cinnamon.

### So what is a London Dry Gin?

A London Dry gin is made using a single-shot method with no intervention after the distillation process. In other words, the gin has been infused (with its botanicals) during the distillation process and no alternations have been made to the spirit after distillation. A London Dry gin had a predominant juniper flavour.

Reprinted from *The Capital Distillery*. For the full article visit: <https://thecapitaldistillery.com/blogs/news/the-wonderful-world-of-gin>

## Diarise: Chenin Blanc International Congress

THE 2nd edition of the "Chenin Blanc International Congress", a unique world congress dedicated to the noble grape variety, Chenin Blanc, will take place from 1 to 3 November 2022 in Stellenbosch.

This second edition in the host city of Stellenbosch, organized by the Chenin Blanc Association of South Africa, on the theme "Chenin revealer of Place" follows the success of the 1st edition launched in France, in Angers in July 2019. An Event of Destination Angers, co-organized with the Chenin Academy in partnership with Interloire, the Anjou-Saumur Wine Federation, the Federation of Wine Associations of Indre et Loire and Sarthe, the University of Stellenbosch and Chenin Blanc Association SA. This first edition, under the aegis of the ISHS, brought together, during the three days of the congress on the theme "Chenin in a changing environment": 36 speakers, 314 partici-



L'Avenir vineyard.

pants of 13 nationalities from five continents, 600m2 of exhibition & networking, four tours and, a unique and exceptional tasting of 349 "Cuvées de chenin" from around the world.

The 2nd edition of this professional congress is part of the DNA of the 1st edition: for three days, researchers, winegrowers, wine producers, wine tourism professionals, wine critics, sommeliers, sales representatives and influencers from around the world will explore, learn, taste and debate while enjoying Chenin Blanc in all its forms.

On the program of this 2nd interactive and multidisciplinary edition, delegates will have the opportunity to attend presentations of the latest advances in research, participate in wine tastings presented by professionals, visit vineyards and savour the local gastronomy. All this in a culturally varied context and in the heart of a breath-taking landscape.

The partners of this new edition of the International Chenin Blanc Congress bring together experts and stakeholders from South Africa's wine regions - winemakers,

scientists, academics, traders, critics, wine tourism experts and sommeliers - with their counterparts from France, Australia, California, India and Israel, among others. This congress will provide a platform for discussion and debate, exploration and learning and, finally, discovery of the unique expressions of Chenin Blanc from around the world. Among them are delegations from the Loire Valley, ancestral land of Chenin Blanc.

For more information visit: [www.chenincongress.com](http://www.chenincongress.com)



# Compressor range offers 20% cost savings

THANKS to their exclusive rotary vane technology, Mattei claim its compressors are the most efficient and reliable on the market. This has been underlined using a revised method for calculating the Life Cycle Cost of compressors: where actual analysis should not be modelled on Zero Hour data, but on the performance over time. As a result of these new simulations, the varying levels of performance between screw and rotary vane compressors emerges: with a deterioration of the former, and a progressive improvement of the latter. And over a 10-year period, the customer who chooses a screw compressor could end up spending up to €168 000 more.

In the industrial sector, the Life Cycle Cost (LCC) is a recognised method to calculate the full costs of ownership for capital equipment. In the case of industrial machine, this calculation is based on three main factors: capital equipment expenditure (Capex), ordinary

maintenance costs and energy-related operating costs.

In a compressor, the running cost is significantly higher than the initial investment and maintenance costs, accounting for up to 90% of the overall LCC. These very high running costs encouraged manufacturers to invest their R&D budgets into conducting specific energy studies to improve their products in terms of increasing energy efficiency and reducing environmental impact.

Mattei has succeeded. Looking at the figures over a five-year life cycle, a rotary vane compressor delivers energy savings of around 20%: this is the lowest LCC on the market. Comparisons with screw compressors vary even more when considering the energy-efficiency performance over a longer period of time.

A screw compressor uses both rollers and thrust bearings with high-tolerance rotors, which operate screws with minimal clearances, thus reducing air

leakage and resulting in high volumetric efficiency. However, any of the bearings will wear out over time, inevitably resulting in increased clearances between the rotors and subsequent drops in volumetric performance. This drop in performance equates to a lower air output, varying from manufacturer to manufacturer, which ranges between 30% and 55% over a 10 year period. The performance drop is typically reversed once the screw compressor undergoes maintenance (usually between 40-50 000

hours) substituting all major rolling and thrust components and resetting the compressor to its original tolerances and volumetric performance.

On the other hand, Mattei rotary vane compressors, do not use either rollers or thrust bearings, and rely on hydrodynamic bushings lubricated with oil that do not wear out over time. The injected lubricant, also performs an important sealing action. The advantages of this design are twofold. Firstly there is no loss in volumetric

efficiency over time; secondly a Mattei compressor typically operates for over 100 000 hours without requiring maintenance to replace worn-out bearings. This allowed Mattei to extend their compression unit warranty to 10 years with unlimited usage. Finally, with Mattei rotary vane compressors, not only does the performance not diminish over time, but it actually improves after the first 1 000 hours of operating. In this running-in period, the blades undergo a further polishing process removing

any last asperities, which initiates a microscopic transfer of material that will last for the full lifetime of the compressor.

This has been confirmed by studies carried out by prestigious international research institutes. The most recent of these was conducted by Intertek in the US on a Mattei Maxima 55kW in 2016. During the supervised long-term test, in the first 500 hours Intertek confirmed the finding of a 4% improvement in terms of Specific Energy of the compressor compared to the test results at Zero Hours.

This test also shows that compared to screw compressors, whose best performance is recorded at zero hours, a rotary vane compressor delivers a significant improvement in energy efficiency at zero hours after just a short period of operation.

The analysis conducted with the Life-cycle Costing method demonstrates that a Mattei compressor is a safe and reliable investment in the long term not only in economic terms, thanks to a reduction in maintenance costs, but also in terms of environmental impact. It should not be forgotten that one of the main factors contributing to greenhouse gas emissions, responsible for global warming, is the consumption of electricity. 50% of this consumption is attributable to the industrial sector, and of this, the production of and delivery to end users of compressed air makes up around 20%.

Mattei are represented in South Africa by Rotorvane.



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## New range of double diaphragm pumps



VERDER Group has expanded its range of Verderair diaphragm pumps with the launch of the e-PURE electrically driven double diaphragm pump series. Launched globally in April, these pumps are available locally as well as for Africa through Verder Pumps South Africa and its distribution network.

According to Darryl Macdougall, Managing Director, Verder Pumps South Africa: "The e-PURE series has a reduced number of flow bends and moving parts, providing this new pump series with a much better

fluid flow. The result is an optimal fluid speed and highest possible energy efficiency."

The e-PURE series sees reduced maintenance, lower energy costs, and a longer lifetime. The pump housing is manufactured from solid machined PTFE or PE (UHMW). The other wetted parts are made from PEEK and SS 316L.

The e-PURE ensures a sustainable solution combined with all the typical diaphragm pump advantages.

Because it is electrically driven, no expen-

sive compressed air is required. This contributes to the overall lower energy consumption of this pump series.

In e-PURE diaphragm pumps, the fluid moves through the pump horizontally. The electric drive ensures the reciprocating movement of the diaphragms so that the diaphragm chambers are alternately filled and pressed. This pump design utilises flapper valves instead of ball valves. Overall, this ensures the speed of the fluid, and the energy efficiency of these pumps is optimal.

## Rotork offer a part-turn option

THE innovative Rotork CK range of modular electric valve actuators has been extended to include a new part-turn variant, known as the CKQ. The entire range has a modular design that provides flexibility and high degrees of configurability, enabling a fast order turnaround and quick delivery. CK actuators provide flow control in non-hazardous locations and are especially suited for diverse applications in

the water and power markets.

This new part-turn variant is especially well suited for harsh and demanding environments and has an operational temperature range of -30 °C (-22 °F) to +158 °F. The IP68 enclosure protection is maintained even when the actuator terminal housing is removed (by using a double-sealing system around both parts of the plug and socket connection).

This contributes to its ideal suitability for use within the water market. Continuous mechanical valve position indication is provided (even without power) and the CKQ provides up to 60 starts per hour at a rate up to 1 start every 6 seconds. All options within the CK range provide oil bath lubrication for extended life, mounting in any orientation and motor-independent handwheel operation available.

## AFS celebrates first year - launches manufacturing plant

THE Abrasive Flow Solutions (AFS) team celebrated the company's first year of business recently (March 2022) with the official launch of its manufacturing plant in Benoni, Gauteng.

AFS, which specialises in the design and manufacture of slurry-related valves, was established by the Engineering Solutions Group (ESG) of Invicta Holdings Limited, as part of the Group's strategy to expand its fluid technology services in Africa.

"The AFS team works closely with our sister company BMG, to extend specialist services, through the design, distribution, supply and support of a broad range of slurry-related valves, including Klep diaphragm and wedge gate valves," says Donald Morrison, General Manager, AFS. "Our specialists successfully achieved their first challenge, which they set for themselves when the company was established - to improve the quality of diaphragm valves, by extending service life and reducing the maintenance requirements of this range. This goal was achieved through hard work and the implementation of advanced design technologies, materials and coatings and is a great tribute to our team."

"Important milestones over the last year include the establishment of a new rubber lining facility, with the installation of autoclaves that have capacities of up to 10m in length.

"Another advancement is a new pinch



An example of the range of AFS valves.

valve sleeve manufacturing facility enabling the manufacture of all pinch sleeves, including high pressure and pneumatic sleeves. We have also made a significant investment to extend our hydraulic pressing facility and through our new design and process, we are able to manufacture high-pressure diaphragms capable of pressures in excess of 20 Bar.

"Another advancement is a new pinch valve sleeve manufacturing facility..."

"AFS has enhanced the design and production of its slurry knife gate valve range, with dimensions ranging in diameter from 50mm to 1,5m valves. The range includes flanged, wafer, lugged, urethane lined and high-pressure knife gate valves. "BMG also distrib-

utes a locally manufactured range of abrasion-resistant valves for Dual Products International. These products include pinch valves, new water air release valves, Resilient Seated Gate (RSV) valves and rotary disc sleeve valves. AFS has recently manufactured and factory-tested some larger DN 700 hydraulically operated 20 Bar valves for a customer in Europe.

"Recently launched Dual rotary disc sleeve valves comprise an advanced rotating gate valve with sleeve design, developed specifically for heavy abrasive and corrosive slurries and water and wastewater installations. This patented design allows the valve to cycle through heavy slurries without sticking. Wafer, flanged and high-pressure variants are available.

This AFS portfolio is particularly well-suited for use in harsh conditions in diverse industries, includ-

ing mining, chemical and petrochemical, water and wastewater, energy production and agri-food industries. Important installations recently, have been in mining slurry, tailings dams, and acid pumping applications, which rely on plant availability and the safe operation of valves.

Another achievement for AFS is that ESG has recently achieved recognition as a Level 2 contributor to Broad-Based Black Economic Empowerment (B-BBEE), which means customers can claim BEE procurement recognition of 125 % against all purchases.

For more information contact: Duncan Eadie, National Product Manager - Industrial Valves, Fluid Technology - Low Pressure, BMG, Mobile: +27 (072) 631 1246 Tel: +27 11 620 7434 Email: duncane@bmg-world.net



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## Motor and variable speed controller technology



By Peter Wolff, of  
Armstrong Fluid  
Control Technology

OVER the last 150 years, development of the electric motor has gone in fits and starts. Initially, all electric motors used direct current (DC). But with the advent of alternating current (AC) and amid the “battle of the currents” between industrial development giants George Westinghouse and Thomas Edison, Nikola Tesla unveiled his induction motor, a new design that converted the power of alternating electrical current into rotational torque.

The asynchronous AC motor was created. The combination of high starting torque and low maintenance saw it quickly adopted for applications that were previously the realm of steam, water, belts/pulleys and horsepower. The reluctance motor, using magnets embedded in the rotor, was also invented in the 19th century. It was handicapped by low efficiency when driven directly from the AC supply. This would change at the end of the 20th century.

### Variable Speed Drives

The invention and mass manufacturing of electronic variable speed drives (VSDs) began in the 1960s and 1970s. Industrial pioneers developed several methods to convert the mains electrical supply at its constant frequency (50 or 60 hertz [Hz], depending on geography) to a variable frequency on the output, resulting in a variable speed induction motor driving the pump or fan. With a suitable control system, plant speed could be adjusted to suit a variable load.

The first generation of VFDs was expensive, large and unreliable. They would regularly trip themselves out to self-protect. Operators responded by often demanding that a bypass system of the VFD to the motor be engineered in case of failure. This made them even more costly, bulky and complicated. Thirty years later, VFDs were smaller, affordable and reliable. The size reduction allowed them to be decentralized and mounted locally.

OEMs of pumps took a step further in the 1990s and integrated them into their products and, in the years since, have added self-adjusting smart speed controllers and web connectivity. This simplifies the design and install of hydronic systems while also delivering more reliable outcomes. The pump controllers’ capabilities often include accurate measurement of flow rate and pump generated head—information that can help to deliver higher process efficiency. A benefit of these improvements has also been the removal of bypasses, rendered redundant just as the starting handle became for cars and automobiles after electric self-starters were introduced.

### Permanent magnet motors—surface mount and interior mount

In motor rotors fitted with permanent magnets, the stator winding no longer has to expend power inducing magnetism in it. But how are the magnets best configured in or on the rotor? As their names imply, surface permanent magnet (SPM) motors have magnets on the surface of the

rotor and interior permanent magnet (IPM) motors have them embedded inside the rotor, shaped to suit the drive application. SPM motors deliver good starting torque, but the arrangement of the magnets generates back EMF in the stator at speed, reducing efficiency. SPM motors are speed limited due to the mechanical limitation of the attachment of the magnets to the shaft.

An IPM motor, embedded in the rotor, allows the shape of the magnets to be optimally configured so the lines of magnetic flux reduce the back EMF at high speeds. Also, no mechanical speed limits apply as they do to SPM.

### The SYN RM IPM motor

Placing PM in the slots in the synchronous reluctance motor produces the IPM SynRM motor. It does not generate back EMF when, at speed, the rotor is aligned to the stator field at one angle and at startup, another angle that generates high torque. One other benefit is that the motor shaft runs cool, improving bearing life. The SYN RM IPM motor uses both reluctance torque and magnetic torque, managing their complementary properties to give high torque at startup with high efficiency and smooth operation at speed. In addition, the power factor is improved. Also, this type requires less magnetic material than a conventional IPM motor.

*This article is a shortened version. For the full transcript, visit: <https://blog.armstrong-fluidtechnology.com/motor-variable-speed-controller-technology>*

## Seven ways smart pump systems reduce costs and maximise budgets

YOUR choice of pumps and managing them can significantly impact operational cost and long-term return on value. In recent years, pump technologies have flourished, delivering a new generation of smart pumps and smart controllers that can enhance existing sites.

Powering the Wastewater Renaissance, a research report commissioned by Xylem, finds that adopting energy-efficient wastewater management technologies can cut electricity-related greenhouse gas emissions by almost half. Such advantages are very timely for pump operations under pressure, says Chetan Mistry, Strategy and Marketing Manager, Xylem Africa:

“As the market faces pressure from rising energy costs and growing urbanisation, pump sites need to make the most of what they’ve got as well as invest smartly in new pump innovations. They need to improve ageing infrastructure with retrofitted improvements and new designs that take less space at existing sites. The savings come from improved operations, reduced maintenance, and fewer breakdowns due to dry running and clogging. Then there is the massive leap provided by variable-speed motors that adapt to changing conditions. This is a fantastic time to leverage smart pump innovations.”

Smart pump systems can reduce costs, maximise savings and improve operations with both new and existing infrastructure:

### Retrofit existing infrastructure

Replacing older pumps is a daunting expense

and a primary reason why sites avoid upgrades. Yet innovations in control systems bring new life to established pumping infrastructure. Sites can retrofit modern control systems to existing pumps, opening the door to features such as performance monitoring, emergency shutdowns, and variable speed controls.

### Reduce energy consumption

Modern pumps offer energy saving by as much as 70 percent (versus fixed speed drives). New models of inverters and variable speed drives manage usage to ensure optimal performance. Unlike traditional pumps that operate on a set level regardless of the conditions, smart pumps adjust accordingly. Some pumps adapt along a kilowatt field rather than a static curve - thus, one pump can act in various capacities formerly requiring several pumps.

### Lower wear and tear

Variable conditions can radically reduce a pump’s lifespan or maintenance intervals. Snoring and dry running are two examples of how prolonged exposure damage a pump, taking years off its lifespan. Smart pumps manage their speed based on inflow conditions, using modern sensors. Sensors and controls can also be fitted onto established pumps to manage inflow conditions.

### Improved maintenance

Smart pumps facilitate improved modular maintenance and repair conditions, reducing downtime and maintenance costs by as much as 50%.



Chetan Mistry.

New pump designs often require fewer components, further lessening the change of parts failure and shrinking inventory requirements for spares.

### Improved continued operations

Shutting down pumps can be very disruptive and stop-start conditions can create unwanted pressure peaks and dreaded water hammers. New features such as adaptive modes enable smart pumps to run continuously as they adapt to factors such as inflow and variable particle sizes. Control systems and sensors enable smart pumps to turn off when not needed but stay online when operations require it.

### Integrated monitoring and planning

Smart pump infrastructure brings several benefits to operations planning while simplifying the environment. Smart motors can operate multi-pump environments, negating the need for external control panels or programmable logic controllers. Sensor data can be integrated

into existing operations centres or sent to tablets and mobile phones apps. Several smart pumps provide remote and automated management features, reducing the need for on-premises staff.

### Lower space utilisation

Traditional pumps are bulky and take up a lot of space. Modern smart pumps offer smaller profiles, taking up less space in a site to be used for other equipment or additional pumps without needing to rebuild the site. Multi-pump controllers reduce the space required for control boxes while providing additional features to both new and traditional pumps.

Smart pump technology delivers considerable savings, improves equipment lifespans, and makes better use of existing site infrastructure. Whether the goal is to acquire new equipment or increase the value of existing systems, study the choices available and make a smart investment today that will deliver value for decades.

For more information visit: [www.xylem.com](http://www.xylem.com)

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## Managing water treatment “life cycle” saves costs and headaches

MOST cooling and heating system failures happen because of the same mistakes or oversights. Anelia Hough, water treatment consultant at Allmech, says that in boilers and cooling towers, these issues include skimping on water pre-treatment or on ongoing maintenance.

“There are four common problems that can occur in boilers and cooling towers that damage effectiveness: corrosion, fouling, biological contamination, and scaling,” she says. “Companies often select not to do water treatment, including pre-filtration, on their cooling and heating systems to reduce operating costs and to meet production demands. This, however, often has the opposite effect and the company might land up losing money. Skipping water treatment doesn’t just result in higher energy costs; customers risk a complete boiler or cooling tower shut down or replacement. That’s far more costly than the initial water treatment equip-

ment and monthly water treatment services.”

A total water treatment programme should address any impurities in the source water (pre-treatment), the water treatment itself (filtration and / or chemical treatment) and ongoing testing and maintenance.

### Stages of water treatment

She says that in boiler operations, poor water quality results in poor quality steam. Feedwater must therefore be pre-treated. The aim is to remove impurities to control deposition, carryover, and corrosion in the boiler system, which affect the boiler’s effectiveness and, in the long run, can cause costly down time and unplanned repairs.

“Within cooling towers’ makeup water, we focus on the water-replacing bleed, and evaporated and leaked water from the cooling tower,” says Hough. “If makeup water is not treated in cooling towers, we almost always



Damaged boiler tubes.

see scale and corrosion taking place, which decrease the efficiency of the system. Microbiological fouling is another concern, as it often causes the problems in the tower as organisms settle on the surface and secrete a polysaccharide layer for protection.

This film then will collect silt from the water, thus growing thicker and further reducing heat transfer.”

After-treatment involves the addition of chemicals. Specific chemicals must be used depending on the application. For exam-

ple, Allmech offers a range of SANS 1827 food-grade chemicals for boilers, which are safe for food, beverage, pharmaceutical and agricultural uses. For cooling towers, the company supplies chemicals that act as scale and corrosion

inhibitors (for open and closed systems), micro biocides, dispersants and cleaning agents.

### Maintenance and testing

“One of the best ways to stay on top of the health of your boiler or cool-

ing tower is to schedule regular maintenance checks,” says Hough. “A comprehensive preventive maintenance programme not only keeps your boiler or cooling tower up and running reliably, it also lengthens the life the equipment and improves safety for employees.”

“Allmech focuses on each client’s individual boiler or cooling tower needs to ensure the best pre-water treatment and chemical water treatment solutions are offered. Our technologies, custom-engineered water treatment plants and cutting-edge solutions for boiler and cooling tower water treatment needs have been developed by helping our customers solve some of the most complex water treatment issues in the industry for over 25 years. Because of our skilled staff and overall expertise, we are confident that our solutions are some of the best in the industry,” she concludes.

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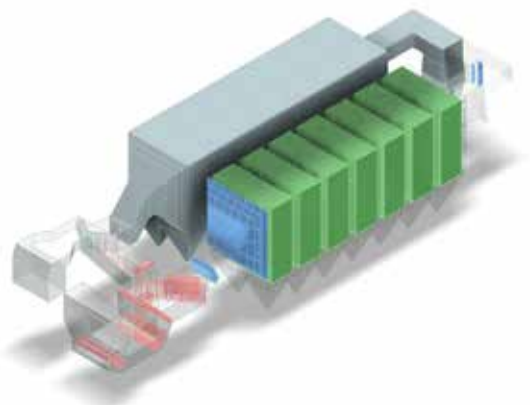


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## Babcock to bring boiler units into the 2020s - meet new emission regulations



BABCOCK has come full circle at a major power station where it will be upgrading electrostatic precipitators (ESPs) on six boiler units that Babcock designed and built in the 1980s.

Using technology not available at the time, Babcock will bring the boiler units into the 2020s, enabling the power station to comply with latest emission regulations of below 50mg of dust per normal cubic metre (Nm<sup>3</sup>) of flue gas, essentially halving the impurities.

To meet the latest emission regulations, a three-part programme is required to enhance the total precipitator capability in order to achieve levels of below 50mg:

- Upgrade and refurbish the SO3 conditioning plant.
- Change the technology on the ESP's transformers to convert them into high-frequency sets.

- Upgrade and refurbish the ESPs to maximise dust collection efficiency to comply with new legislation.

Babcock has been awarded the third portion of the programme and will refurbish four precipitator cases in each boiler beginning in 2023.

Dave Brook, Technical Director at Babcock, explains that ESPs use an electric charge to remove impurities from air or gases through a series of collector and discharge electrodes.

"Fly ash is a very fine dust found in hot flue gases from coal combustion. It travels through the heat transfer surfaces of the boiler and the air heater, and eventually emerges through the ducting and through electrostatic precipitators. After it is removed and deposited in the hoppers below, the fly ash is either removed

or sold to the cement industry," Brook says.

"The fine dust in the gas travels a torturous route in the boiler, resulting in areas where there is more dust, and others with less dust. In order for the ESPs to function optimally, the gas distribution should be as homogenous as possible," adds Brook.

He explains that an ESP is a box with a series of electrodes or plates strung vertically inside of it. The dust particles are charged creating a flow to the collector electrodes upon which the dust is deposited and collected. When these plates get full, they are rapped (struck), and all the dust slides down into the hopper.

Babcock will use computational fluid dynamics modelling, which was not available in the 1980s, to model the gases from the outlet of the boiler into the precipitator cases, to better understand and

manage what is happening with the gases under different load conditions and improve dust distribution, thereby improving dust collection and removal.

Also included in Babcock's scope of work is the replacement of the current wire-type discharge electrodes with modern and more reliable rigid discharge electrodes. After time, the 12-metre long weighted discharge electrode wires have started to perish, diminishing the electric, or corona field, causing the collector electrodes to lose efficiency and collect less dust. The new rigid discharge electrodes, which will be manufactured in South Africa, cannot break and will create a more stable corona field, thereby maximising efficiency of the ESPs.

Babcock is the lead contractor responsible for all project management, integration, delivery and construction for the project, and will be working in partnership with USA-based Babcock & Wilcox (B&W). B&W owns the technology of the original design of the precipitators and will be undertaking the process and detailed engineering.

For more information  
Email: david.brook@babcock.co.za

## Case study: Flue gas monitoring system increases overall boiler and burner efficiency

ARLA Foods is one of the UK's leading dairy companies, processing approximately two billion litres of milk a year and supplying a third of the nation's milk. Stourton Dairy is one of Arla Foods flagship production facilities. The project brief for this site was to improve efficiency by upgrading to the Autoflame Mk7 Controller and installing Mk7 Exhaust Gas Analysers (EGA) on each boiler to monitor and reduce exhaust gas emissions. It is important for Arla Foods to maintain the efficiency of the company's manufacturing process and a solution was needed to reduce and monitor emissions

from the boiler plant at Stourton. High levels of O<sub>2</sub> within a boiler can have a negative effect on the combustion process, cooling the burner flame and restricting heat transfer to the water. Reductions in O<sub>2</sub> levels will dramatically improve the combustion efficiency.

The Autoflame EGA system offers enhanced monitoring of flue gases produced during a combustion process. Six gases can be measured at any one time including O<sub>2</sub>, CO<sub>2</sub>, CO, NO and SO<sub>2</sub> or NO<sub>2</sub>. The system is able to make minor adjustments to the combustion configuration when needed. Unlike other trim sys-

tems, Autoflame's EGA carries out "3 parameter trim" and is used to maintain the commissioning values.

Trimming on O<sub>2</sub>, CO and CO<sub>2</sub> values for extra safety, trim is used to ensure the boiler functions with acceptable levels of gas (specified at the time of commissioning).

The EGA will make adjustments when necessary in order to maintain optimum combustion and minimise environmental impact. It works together with the Mk7 Autoflame Combustion Management System to increase efficiency, reduce fuel consumption and improve combustion. Data can be displayed on

the EGA touch screen for analysis in graph or chart form and can also be exported to the Building Management System (BMS) via the Autoflame Data Transfer Interface (DTI).

Since installation of the EGA at Stourton, Arla have seen improvements in efficiency and reductions of over 2 per cent in O<sub>2</sub> levels and are now considering the installation of the DTI to take full advantage of the EGA's monitoring capabilities.

Autoflame is represented in South Africa by Combustion Technology; Email: info@combustiontechnology.co.za for more information.

## Boiler maintenance and troubleshooting best practices

BOILERS systems are an integral part of a commercial building's central energy plant, typically comprising several devices located together, allowing for easy monitoring and services like water and electrical systems. The devices are chillers, cooling towers, piping and distribution systems, and boilers.

### Prevent costly downtime and expensive equipment failures

Modern diagnostic equipment can help save large amounts of energy in a modern central energy plant. Many boiler problems can be diagnosed and possibly prevented by conducting regular, routine maintenance and repair and reducing costly downtime and expensive equipment failures. Proper boiler and equipment operation improves safety. All of these benefits easily cover the initial cost of quality test equipment.

- The Fluke TiS thermal imager is an infrared camera that transforms preventive maintenance programs into reality. Technicians/contractors who need quality images and feature-rich cameras, an option for their troubleshooting, intermittent inspection, and preventive maintenance need Fluke's new TiS. Features include Voice Annotation, IR PhotoNotes, Asset Tagging, and manual or fixed focus.
- The Fluke 179 DMM digital multimeter, with temperature readings, is the industry-standard troubleshooting tool for electrical and electronic systems.

### What needs to be checked?

Each of the boiler systems has several devices that allow it to function efficiently and safely. Common fittings include steam traps, pressure gauges, insulation, pumps, and valves. To maintain safe and efficient boiler operation, these fittings must be maintained properly. Safety sensors, electrical cir-



Fluke TiS thermal imager.

cuits, and the efficiency of combustion must be checked as well.

### Steam traps

The Fluke TiS thermal imager can easily and quickly calculate the temperature of the pipes, and diagnose whether or not the steam trap is operating properly or needs repair. The portability of thermal imagers allows quick diagnosis of multiple steam traps. It has been shown that repairing one large steam trap could pay the cost of the thermal imager.

Valves are used for the control of hot water, feedwater, condensate, and steam. Modulating valves control temperature at terminal units, air handling units, and steam to hot water heat exchangers. A valve that is malfunctioning can cause improper operation and high energy costs. The Fluke TiS thermal imager detects small steam leaks for early valve repack and repair and show the temperature difference on either side of the valve, indicating a leak.

### Safety limits, sensors, and controls

A boiler system has numerous safety limits, sensors, and controls. If these fail, it can lead to boiler shutdown or a potentially catastrophic boiler explosion. Components could include flame and steam pressure, gas pressure, temperature devices. Their

accuracy and operation should be checked with certified diagnostic test equipment to ensure safe and efficient operation.

Electrical systems are another area where diagnostic equipment is vital in a boiler plant. A major worry is that incoming electrical power from the utility may fail, be interrupted, or have the wrong current, voltage, or phase.

Fortunately, power quality analysers can show incoming power quality issues and monitor for problems. Other potential problems occur in individual electrical components: loose connections, breakers, switches, safety limit controls, and sensors. The Fluke TiS thermal imager can be used to see "hot spots" in a panel, which may be caused by loose connections or a breaker about to fail. The Fluke 179 DMM digital multimeter can check continuity in electrical control systems. Measure temperature and pressure signals such as resistance, voltage, and current input sensors and compare them with factory calibration values to determine whether the sensor or transmitter is operating properly. Some DMMs can be used to generate voltages to check the operation of motorised valve actuators.

Contact COMTEST on +010 595 1821, sales@comtest.co.za or www.comtest.co.za



## A safe choice - Draw-wire mechanisms for encoders

- Precise position detection including over long distances
- High operational reliability thanks to robust mechanical construction even under permanent strain
- Mechanically compatible across manufacturers, for encoders with synchro flange
- Compact design even with rope spans up to 15 m

**Exact positioning including over long distances**



Draw-wire mechanisms for encoders are the ideal choice when positions must be accurately determined over straight distances. Examples of use range from short distances, for example with scissor lifts or fork lift trucks, to long dis-

tances, such as those covered by trolleys on crane booms or transport systems in high-bay warehouses.

**Solid connection, robust against external influences**

Advantage of the pul-

ley principle: there is an uninterrupted connection between the encoder and the moving object. Adverse effects on distance detection e.g. caused by dirt with optical distance measurement, are mostly eliminated. The mechanical com-

ponents are designed for industrial, long-lasting use with up to 1 million pulls.

For more information contact ifm South Africa. Tel: +27 12 450 0400 E-mail: info.za@ifm.com. Website: <http://www.ifm.com>

## How automated payee onboarding enhances cybersecurity and boosts your bottom line

ACCELERATED by the COVID-19 pandemic, tech innovations used to streamline and add control to slow, manual processes are fast becoming a necessity, not an option.

Arguably one of the most crucial processes in any business is the onboarding of payees including suppliers and vendors, as this is when new relationships are initiated.

“Unfortunately, the rise in tech innovation brings with it a rise in cybercrime, and it is better to fight digital threats with digital tools,” notes Ryan Mer, CEO, eftsure Africa, a Know Your Payee™ (KYP) platform provider.

Here are some of the challenges faced during onboarding and how digital onboarding tools can help mitigate them:

### New or changed payee account fraud

This particular brand of cybercrime costs the financial services industry billions of dollars each year. Interceptions or impersonations of new payee onboarding requests by fraudsters to change bank account details and then using these bank accounts to perpetrate the fraud are a serious and daily occurrence.

“When onboarding new vendors or making changes to existing vendor details, verifying bank account data is a critical control that cannot be neglected,” says Mer.

**Solution: Automate your KYP.** Rather than implementing more procedures and often manual protocols, Mer says it is worth considering a third-party platform to help manage supplier data and automate supplier verification and payment checking, which will not only enhance security, but save your company time and increase accuracy by eliminating human



Ryan Mer.

inputting and verification methods.

### Vendor Master Data

Maintaining supplier data integrity is critical, especially when it comes to bank account details. Information that was verified as correct at onboarding will not necessarily be correct further down the line if that information is updated or compromised. Fraudsters are constantly trying to manipulate staff (especially targeted at the finance and procurement teams) to update vendor bank account details or add fictitious supplier details.

**Solution: Checking integrity of supplier details at point of payment.** An automated solution that independently re-checks payment details prior to payment release can help identify compromised banking details and prevent a fraudulent payment from being released.

A solution such as eftsure's payment screening technology can help identify compromised vendor banking details with the click of a button, prior to the funds being released. The screening will also identify if a supplier sitting in the payment batch has not come through proper vendor onboarding, approval and verification pro-

cesses, thereby identifying a potentially fictitious supplier added to the payment batch.

### Slow, inefficient processes

When demand for faster and easier processes has never been higher, relying on manual onboarding practices can cause your company to lag behind competitors as manual methods are generally slow, with lots of back and forward, negatively affecting the vendor's onboarding journey.

**Solution: Automated processes.** As onboarding is one of the first experiences a supplier will have with your company, it should ideally be as seamless and simple as possible. By implementing a platform that can digitise and automate the process, you can speed up the onboarding journey considerably and collect all the information and compliance-related items a business may require upfront, saving time for all parties involved. A digitised and controlled internal approval process that is automatically part of internal procedures will also be a big win for internal staff who are responsible for this, as well as internal auditors who want to review the transaction trail.

## Tried & tested

The new PI pressure sensor for hygienic applications



For years the ifm pressure sensors of the PI series have proven their worth in the food and beverage industry. But even what is successful can be improved. The resolution of the measuring range was increased to 20,000 steps by implementing IO-Link and 32 bits. This is an enormous benefit, especially for hydrostatic level measurement with head pressure. This is because the actual pressure detection only takes place in a fraction of the measuring range.

An interesting feature for maintenance and commissioning is the simulation function which allows the sensor to transmit measured signals or error states to the controller. The sensor is permanently resistant to 150 °C medium temperature. This is measured and additionally transmitted via IO-Link (accuracy 2.5 K).

[www.ifm.com/za](http://www.ifm.com/za)



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# Diarise: PIPES XIII

Emperors Palace, 6 & 7 September 2022



Conference keynote speaker, Roelof Botha.

THE Southern African Plastic Pipe Manufacturers Association (SAPPMA) has released an exciting line-up of local and international speakers who will be presenting at the PIPES XIII Conference that will be taking place on 6 & 7 September 2022 at Emperors Palace in Gauteng.

Jan Venter, Chief Executive Officer of SAPPMA says they are looking forward to the hybrid conference after a two-year absence owing to the COVID-19 pandemic. Whilst SAPPMA encourages as many people as possible to attend in person, there will also be the opportunity for delegates to log-in virtually.

The theme of PIPES XIII is “The Versatility of Plastic Pipe”. Local industry experts will share the stage with some of the best international papers that were presented at the PPCA’s PIPES XX conference in Amsterdam last year.

“We are very fortunate that our event will take place in collaboration with the Plastic Pipe Conference Association

(PPCA) - hosts of the biggest international pipe conference that takes place every second year either in Europe or the USA. A spin-off conference is organised every alternate year and this year it is coming to South Africa!” Jan says.

## Speaker line-up

The opening keynote speaker for the event will be popular economist Roelof Botha, followed by various local and international speakers who will be covering all elements relating to pipeline design and installation, standards, testing and certification, extrusion technology, addressing water problems in Southern Africa, infrastructure, raw materials and the rehabilitation of old pipelines.

Presenters include: Dr Mike Troughton (TWI LTD), George Diliyanis (Safripol), Dolores Herran (Molecor), Dominique Guegnaut (GRTgaz), Kirtida Bhana (Plastics SA), Beverley Manikum (Sasol), Antonio Rodolfo Jr (Braskem S/A, Vinyls), Sylvie Famelart (European Council of Vinyl Manufacturers), Albert Vaartjes (Rollepaal), Christian Schalich (SIKORA AG, Corporate Communications), Joerg Wermelinger (Georg Fischer Piping Systems Inc., TEC), Ilija Radeljic (Pipelife Norway), Gunter Dreiling (Borouge Pte. Ltd., Innovation Centre), Peter Sejersen (TEPPFA), Mario Messiha (Polymer Competence Center Leoben GmbH), Prashant D.Nikhade (Borouge Pte Ltd), Sjoerd Jansma (Kiwa Technology), Gregory Vigellis (Union Pipes Industry LLC), Norbert Jansen (PE100+), Lennert Bakker (Suloforce), Simon Thomas (Simon Thomas Consulting), Moshodo Motebele (Department of Water & Sanitation), Jacques van Eck (Avesco), Mike Smart (Genesis Consulting), Alaster Goyns (Pipes CC), Victor Pinedo (Georg Fischer Piping Systems Inc., TEC), Ian Venter (SAPPMA),

Bruce Hollands (Uni-Bell PVC Pipe Association), Ricardo Pascual Galan (Aenor) and Kate Kleingeld (Plastic & Chemical Trading).

## Exhibitors

In addition to listening to this line-up of world-renowned speakers, delegates will also be able to visit exhibitions by leading plastic pipe manufacturers, suppliers and industry partners such as Aenor, Alprene, BSI Group, MacNeil, Molecor, Pipeflo, Plastiweld, Pipestar Africa, Zerma etc.

## Sponsors

“We would not be able to host this event without the financial support of our sponsors. In particular, we wish to thank Molecor, who has come onboard as a Gold sponsor and Plastic & Chemical Trading, our silver sponsor,” Venter says.

## Conclusion

“Each year, our PIPES conference attracts people from a wide range of different ages, backgrounds and industries who benefit from this valuable learning opportunity. The event is a must for students and academics, engineers, industry representatives, local government, parastatals, pipe fittings and extrusion equipment manufacturers, raw material suppliers and consultants who need to remain at the top of their game.

For two days, they will not only have the privilege of being exposed to the latest industry research and best practice, but there will also be ample networking opportunities with fellow professionals, whilst also earning CPD points,” Jan concluded.

For more information or to register for PIPES XIII, visit the Events Page on [www.sappma.co.za](http://www.sappma.co.za) or contact Enrike Albasini via email at [admin@sappma.co.za](mailto:admin@sappma.co.za)

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## Traditional Indian medicine is effective in treatment of type 2 diabetes, study finds

By University of Nottingham

A new study, led by experts at the University of Nottingham, has found that several traditional medicines commonly used in South Asia, are effective in maintaining blood sugar levels in patients with type 2 diabetes.

Ayurveda is a traditional medical system that has been used for thousands of years in many South Asian countries such as India and Nepal. Some of the herbs included are also used in other parts of the world including Iran, China, and Mexico—to name a few.

A multi-pronged and individualized approach is used to manage health conditions such as lifestyle modification (including diet), Ayurvedic detoxifying and purifying therapies (e.g. Panchakarma), and Ayurvedic medicines (containing plant, animal, or mineral-origin ingredients—single or in combination).

In this new study, published in *Frontiers*

in Pharmacology, experts conducted an in-depth review to show that these medicines are effective in blood sugar control in people with type 2 diabetes. Other beneficial effects, such as on body weight, blood pressure, cholesterol, and other diabetes-related parameters were also shown.

It is the first comprehensive systematic review on any traditional medicine (including Ayurveda), which included a wide range of Ayurvedic medicines. The research was led by Dr. Kaushik Chattopadhyay, Associate Professor in Evidence Based Healthcare in the School of Medicine and the Nottingham Center for Evidence Based Healthcare (A JBI Center of Excellence) at the University. The team members have expertise in Ayurveda, diabetes, and this type of research, and are based in top institutes in the UK, India, and Nepal.

Type 2 diabetes is a complex disorder that has major health, social, and economic consequences. Type 2 diabetes is one of the main diseases for which patients

consult Ayurvedic practitioners and use Ayurvedic medicines, often continuously from the point of diagnosis.

Ayurvedic medicine is commonly used by patients as it fits with their health beliefs and culture. Its acceptability, satisfaction, and perceived relief are usually high, especially among

rural, poor, older, and indigenous/minority populations. Many patients with type 2 diabetes prefer not to use Western medicines due to the associated side effects, cost, and mode of administration (e.g., injections).

Previous systematic reviews have shown the potential for managing type 2 diabetes with these medicines, however many need updating and none have provided a comprehensive summary of all the medicines evaluated for managing the condition.

As part of this review, the team searched a range of sources, including 18 electronic databases. Two hundred and nineteen articles were included in the review, which represented 199 randomized controlled trials (21,191 participants) and 98 Ayurvedic medicines.

Many Ayurvedic practitioners may view the inclusion of herb extracts and proprietary Ayurvedic medicines in this review as a deviation from the classical style of management. However, in reality, many Ayurvedic practitioners prescribe, and many people consume these types of medicines.

Dr. Chattopadhyay said: “This is the first time a thorough review has taken place looking at all these medicines on a much larger scale. The current evidence suggests the benefits of a range of Ayurvedic medicines in improving glycemic control in type 2 diabetes patients. Given the limitations of the available evidence and to strengthen the evidence base, high-quality randomized controlled trials should be conducted and reported.

“As part of the funded project, we have developed a clinical guideline for managing type 2 diabetes by Ayurvedic practitioners based on this evidence and will be evaluating it.”



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# Suffer the little children

As happens on the odd occasion, the brains trust of convivial conversationalists was gathering in the far corner of the local pub and grill to address the pressing problems of our neighbourhood and the world. And as happens on the not-so-odd occasion, Luke the Dude was hogging the floor.

“Really, sometimes I don’t know what’s worse,” he lamented. “The arrogance of those lordling it over us or their bare ignorance.”

“What do you mean,” enquired Miss Lily, “the rolling spectacle of President Ramaphosa hiding millions of dollars in his couch – by the way, it’s called a ‘bank’ in Afrikaans, maybe that’s where he got confused – vengeful former spy boss Arthur Fraser laying criminal charges against him and Cope then laying corruption charges against Fraser?”

“All of the above plus the rest of it; the list is endless,” nodded Luke knowingly.

“What caught my eye was the inhumanity of ignorami in positions of power,” pondered Bill the Beard, “The gang of ANC bosses collapsing the once Friendly City of Port Elizabeth comes to mind. Those well-fed and never-thirsty people whose sole achievement was to change the name of the place to Putsonderwater.”

“Oh no, it is called Ogeberha,” informed Big Ben, failing to get it.

“How do you spell Ogeberha, Ben?” grinned Luke the Dude deviously. Of course Big Ben did not know, along with the rest of us – thus giving Luke the gap: “Easy,” lectured he, “Listen carefully, I am going to say it only once: P, E.

“And that, if you want to know, is also the only way you’ll find the place for its weather forecast.”

“Funny guy,” grumbled Ben, sounding

threateningly like Julius Malema disrupting Parliament. Or maybe Trevor Noah doing Malema.

The Prof lifted a warning eyebrow to Luke the Dude. Bill the Beard concurred and retook the floor:

“Back to PE, please: An example of the cruelty of incompetence. The deployed geniuses in charge of Social Development, so to speak, in the Eastern Cape have managed – from April to the end of June – to provide exactly 141 food parcels to families in need. That’s it, in a province where more than four out of every ten children live below the food poverty line.

“Meanwhile, at the other end of the country, at the Rahima Moosa Mother and Child Hospital in Johannesburg, we have learned the heart-breaking reality about babies dying when Dr Tim De Maayer, a highly experienced paediatrician, blew the whistle on the perilously mismanaged state of public hospitals, with death and immeasurable suffering the result.

“To which I want to add: specifically in the ANC-governed Gauteng and conceivably other ANC provinces, to be fair to the Western Cape and the DA.

“Dr De Maayer wrote an open letter to the hospital administrators starting, as reported by Daily Maverick, with ... I’ve got the words here:

“Last week I attended the funeral of a 13-year-old patient of mine who I have looked after for years at Rahima Moosa Mother and Child Hospital. Today I counselled two mothers, informing them that our resuscitation measures had been in vain.

“I wish you could be there to see the pain and grief that these parents and their families go through. Children are dying and the horrendous conditions in our public hospi-

tals are contributing to their deaths.”

“He mentions doctors trying to save lives by the light of their cellphone torches, loss of life in blackouts because the generators are too small, unrepaired and missing equipment, toilets running dry, hospital-acquired infections spreading like wildfire and a further litany of failures adding to this real-life nightmare.

“Also, how attempts to have these deadly conditions addressed by following the ‘correct procedures’ came to naught, including reports going back to 2016 and a letter detailing the disaster as recently as 11 April. He then asks unsettling questions, such as ‘Would you admit your child to this hospital?’ and ‘Have you read the reports?’

“So how did the ANC cadres in charge respond? What do you think?”

“Well ...” considered Big Ben, “they no doubt set up an emergency task team led by someone of André de Ruyter’s experience and management skills, to get the problems sorted. I mean, we all pay taxes; they’ve got the money. It’s simply a management problem.”

“Oh dear,” despaired The Prof, “if only that were true ...”

“Useless!” agreed Jon the Joker. “I’ll wager R100 to R10 they fired the bloke and now have one fewer medical specialist who cares about his patients.”

“Agreed,” frowned Miss Lily. “In fact, I offer twenty to one.”

“Okay, learned Biker King,” (Bill the Beard organizes the local version of the Hell’s Angels in his spare time. – Ed) fidgeted champion of the 19th hole Colin the Golfer, “get a move on then. Take us out of our misery before someone loses a lot of money, okay?”

“Useless!” exploded Jon the Joker. “I could have had at least my beer tab covered here!”

## 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



“Technically,” responded Bill the Beard, “no bets would have been won. Of course their first instinct was to fire him and they did so pronto. Who does this white man think he is? How dare he speak like that to those appointed above him? But then, sorry Jon and Miss Lily, the public outcry made their bosses tell them to cancel their suspension.”

“So is that the end of the matter?” asked Stevie the Poet incredulously. (He has been out of circulation writing a book or something. – Ed)

“No ways!” responded The Beard equally incredulously. “They are bringing ‘disciplinary action’ against him in a desperate attempt to still get him fired for, as the DA’s Shadow Minister of Health, Michele Clarke, describes it, ‘revealing the state of decline’ at his hospital.”

“The DA has taken up his fight in Parliament,” added The Prof. “They also saved Cape Town from Blackout Stage 6 when the rest of the country sank into that level of frustration. So, there are some good news stories too, if you know where to look ...”

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# Intermittent fasting may help heal nerve damage

By Jacklin Kwan, Imperial College London

INTERMITTENT fasting changes the gut bacteria activity of mice and increases their ability to recover from nerve damage.

The new research is published in Nature and was conducted by Imperial College London researchers. They observed how fasting led to the gut bacteria increasing production of a metabolite known as 3-Indolepropionic acid (IPA), which is required for regenerating nerve fibres called axons—thread-like structures at the ends of nerve cells that send out electro-chemical signals to other cells in the body.

This novel mechanism was discovered in mice and is hoped to also hold true for any future human trials. The team state that the bacteria that produces IPA, Clostridium sporogenesis, is found naturally in the guts of humans as well as mice and IPA is present in human’s bloodstreams too.

“There is currently no treatment for people with nerve damage beyond surgical reconstruction, which is only effective in a small percentage of cases, prompting us to investigate whether changes in lifestyle could aid recovery,” said study author Professor Simone Di Giovanni from Imperial’s Department of Brain Sciences.

“Intermittent fasting has previously been linked by other studies to wound repair and



Credit: Pixabay/CC0 Public Domain

the growth of new neurons—but our study is the first to explain exactly how fasting might help heal nerves.”

### Fasting as a potential treatment

The study assessed nerve regeneration of mice where the sciatic nerve, the longest nerve running from the spine down the leg, was crushed. Half of the mice underwent intermittent fasting (by eating as much as they liked followed by not eating at all on alternate days), while the other half were

free to eat with no restrictions at all. These diets continued for a period of 10 days or 30 days before their operation, and the mice’s recovery was monitored 24 to 72 hours after the nerve was severed.

The length of the regrown axons was measured and was about 50% greater in mice that had been fasting.

Professor Di Giovanni said, “I think the power of this is that opens up a whole new field where we have to wonder: is this the tip of an iceberg? Are there going to be other bacteria or bacteria metabolites that

can promote repair?”

### Investigation reveals metabolism link

The researchers also studied how fasting led to this nerve regeneration. They found that there were significantly higher levels of specific metabolites, including IPA, in the blood of diet-restricted mice.

To confirm whether IPA led to nerve repair, the mice were treated with antibiotics to clean their guts of any bacteria. They were then given genetically-modified strains of Clostridium sporogenesis that could or could not produce IPA.

“When IPA cannot be produced by these bacteria and it was almost absent in the serum, regeneration was impaired. This suggests that the IPA generated by these bacteria has an ability to heal and regenerate damaged nerves,” Professor Di Giovanni said.

Importantly, when IPA was administered to the mice orally after a sciatic nerve injury, regeneration and increased recovery was observed between two and three weeks after injury.

The next stage for this research will be to test this mechanism for spinal cord injuries in mice as well as testing whether administering IPA more frequently would maximize its efficacy.

“One of our goals now is to systematically investigate the role of bacteria metabolite therapy,” Professor Di Giovanni said.