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Cape Town's Business Hub

Number 1 for start-ups.

Hennops River crisis

The difference of one individuals passion and drive.

The NIP 2050 places a tall order

For the construction sector.

Hydrogen tech 'revolution' - hope or hype?

By Roger Harrabin, BBC environment analyst

THE compendium of vehicles powered by hydrogen now stretches from excavators to micro-taxis, trucks, boats, vans, single-deck and now double-decker buses – and even small planes.

It works by reacting hydrogen with oxygen in a fuel cell to generate electricity. The only direct emission is water.

Talking about a revolution

So at last, the long-awaited hydrogen revolution is here. Or is it?

Back in the early 2000s, backers of hydrogen thought it would dominate the clean automobile market.

But the promised "hydrogen highway" never materialised, for a couple of crucial reasons.

Firstly, hydrogen power needed a new infrastructure, whereas rival battery cars could be charged off the near-ubiquitous electricity grid.

Secondly, high-powered batteries at that time were already well-advanced for other uses such as computers, but hydrogen was not.

So hydrogen lost the head-on battle for the motor car. But now it's back in the frame for the sort of transport, industry and heating tasks that batteries are struggling to fulfil.

Trucks fall into the same category as construction machines such as excavators and bulldozers – where batteries range and weight would make it a non-starter.

Double deckers

The Bamford family, which manufactures double decker busses in its Wrightbus factory at Ballymena in Northern Ireland, and also owns JCB construction equipment (where it is trialling a prototype hydrogen fuel cell excavator), says it has orders for 80 hydrogen powered double-deck buses.

That still leaves the issue of charging infrastructure – but that can be solved by providing hydrogen pumps on motorways for long-distance truckers.

Trials are underway in the UK and Europe of hydrogen powered trains.

The same network could fuel hybrid battery and hydrogen cars of the future and dispense with the need for ever-heavier batteries in plug-in cars.

Buses could use hydrogen stored at depots in Kevlar-lined tanks for safety and fears of hydrogen tanks exploding have been addressed by the advent of tanks lined with Kevlar and hydrogen release mechanisms in case the tank is struck.

Taking off

Airports could also store hydrogen, and the first test flight of an electric plane in the UK recently was powered by a hydrogen fuel cell.

There is – forgive the pun – a head of steam building over hydrogen. Germany is racing ahead with a network of filling stations and a hydrogen train. It's investing EUR 7bn in a bid to dominate the hydrogen market.

The EU Commission wants a slice of the action.

The website Euractiv reported that it plans to publish a hydrogen strategy soon. A leaked draft floated the idea of making the Euro the currency for international hydrogen trades, as the US Dollar is for oil.

The UK government also intends to announce a hydrogen strategy before the Parliament closes for the summer, as part of its economic recovery package.

It's being spurred on by rebukes that the UK lost the battle for battery technology to China – so it mustn't let the hydrogen bandwagon escape. The government is advised by its Committee on Climate Change to start large-scale trials in the early 2020s.

Indeed, within weeks from now, Britain's first hydrogen train – developed by Birmingham University - will be tested on regular tracks.

So it looks as though hydrogen has finally made it. But not so fast… because it's by no means trouble-free.

Currently almost all the hydrogen sold in the UK is produced by splitting it from natural gas (Blue Hydrogen). But that's costly and emits lots of planet-heating carbon dioxide.

The problem can be tackled by capturing the CO2 at a hydrogen production hub, then burying it with carbon capture and storage. But that will drive the cost up further.

The alternative is inherently clean (Green Hydrogen) – but very expensive. It entails using surplus renewable electricity, like when the wind blows at night, to split hydrogen from water using a fuel cell.

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Water reuse webinar participation exceeds expectations

THE CBN staged round table webinar on waste water reuse held on 1st September attracted more than 70% attendance from the 117 participants who registered for the event, exceeding the industry norm by more than 30%.

CBN would like to thank its platinum and gold sponsors Maskam Water and Xylem Water Solutions who received a high level of feedback from participants, confirming their participation.

This influential event was the second in a three part series staged in conjunction with the SA Water Chamber to address the spectre of a predicted 17% shortfall of supply against demand by 2030.

Clearly water reuse as one potential solution to our impending water crisis struck a chord with the audience, from across the water and wastewater sectors.

The two hour round table discussion was very ably moderated by Dr Nonhlanhla Kalebaila, Research Manager: Drinking Water Treatment & Quality at the WRC, directing probing questions to the panel of experts:

- Megan Schalkwyk - Process Engineer, Umgeni Water; Chair WISA Water Reuse Division KZN Chapter & Vice Chair WISA KZN Branch
- Chris Swartz - Independent Water Utilization Engineer & WISA Water Reuse Technical Committee Member, former Division Lead & currently Chairperson, WISA Water Reuse Western Cape.
- Achim Wurster - Independent Process Engineer & former WISA Board Chair and WISA Membrane Technology Division Lead.

The panel and Dr Kalebaila fielded questions posed by the enthusiastic audience who were keen to under-

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Water reuse webinar participation exceeds expectations

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stand the technical intricacies of water reuse, the technologies involved and how it has been applied to date by public and private authorities and organisations as well as the mining industry.

The next CBN round table discussion focuses on sanitation issues on the 29 September and is free to all interested parties.

Companies and organisations keen to participate through sponsorship or by submitting panel experts should email CBN's publisher Robin Dunbar, email: Robin.Dunbar@cbn.co.za.

Notification of audience registration will be advised through the CBN daily enewsletter and social media platforms.

Hydrogen tech 'revolution' - hope or hype?

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Fool cells?

The process could be considered wasteful because it involves turning electricity into a gas, then back into electricity – a two-step shuffle dismissed by Tesla's Elon Musk as "staggeringly dumb". "Fool cells", he calls them.

But hydrogen-lovers believe the future electricity grid will produce so much cheap off-peak power that we'll need to find other uses for it. And they hope to see the cost of fuel cells plummet following the example of offshore wind.

It's widely accepted that homes with low-carbon heating systems such as heat exchangers will need a boost in a cold snap from another source – and that's looking increasingly like hydrogen.

Trials are already underway using hydrogen blended into natural gas at Keele University.

And, depending on how much support it gets from the government - it looks as though a technology that lost its key battle against battery cars two decades ago will still find a place in the zero-carbon economy of tomorrow.

See article on same page - The hydrogen economy – a fanciful diversion? for an exclusive article on the IDC and Sasol's outlook on the future of hydrogen in the South African context.

Glimmer of hope at Trans Hex group

PAROW-based diamond mining group Trans Hex looked dead and buried in 2019 after its subsidiary West Coast Resources (the old Namqualand mines bought from De Beers) was placed into liquidation. But indications are that a new look Trans Hex is regaining some shine.

The diamond miner delisted from the JSE two years ago, which means there is no official insight into the operations. But Astoria, which holds a 35% stake in Trans Hex, issued some interesting comments in its half-yearly report to end June recently.

Astoria noted that Trans Hex had benefited from the restructuring implemented post its delisting, which led to a dramatic reduction in costs. What's more, as the diamond trade normalised after the lifting of lock down restrictions so diamond prices also "increased substantially".

Astoria said the Somiluana mine in Angola achieved good sales prices during this period. "Higher oil prices further alleviated the dollar shortages in Angola, which made it easier for Trans Hex to repatriate funds to South Africa."

Astoria said Trans Hex now generated a healthy cash flow - albeit' lumpy due to the friction of remitting currency out of Angola. Over the past six months Astoria received its first dividend of R3.5 million from this investment.

Interestingly Astoria values its 35.7% stake in Trans Hex at a 30% discount to the group's net asset value - which equates to R53 million. This R53 million figure infers a value of around R150 million for Trans Hex - which is actually less than the R225 million the group and other partners paid for West Coast Resources.

With Trans Hex seemingly on firmer financial footing, it will be interesting to see if there is any enthusiasm for acquiring other diamond mining operations to ensure operational diversity and build scale.

The hydrogen economy – a fanciful diversion?

Aimee Clarke, CBN reporter, examines the state of play in the South African context and is underwhelmed.

THE hype around the potential of the Hydrogen Economy is palpable. Simply put, it is being hailed by government and big business as the solution to just about every problem facing the energy and industrial sectors, and their related environmental concerns. "It could provide us with a just transition with the potential to decarbonise various industry value chains and provide security of energy supply. It can also contribute towards the achievement of the Sustainable Development Goals," said Minister Ebrahim Patel recently. "Hydrogen is potentially the missing piece in the puzzle towards attaining net-zero emissions by 2050, in line with the Paris Climate Agreement of 2015," he said.

There is *potential*, it *could*, it *can*… The question remains: *will it?*

For the time being, it seems most moves towards the Hydrogen Economy are purely hypothetical – with a myriad of plans, strategies and agreements between stakeholders. While these are no doubt necessary, the concern remains whether South Africa has what it takes to execute on its vision of being a key role player in the global hydrogen economy.

Sasol and the Industrial Development Corporation (IDC) recently signed an agreement to "jointly develop and shape an enabling environment to advance South Africa's green hydrogen economy". CBN asked, "What does this actually mean?" For the IDC – according to spokesperson Tshepo Ramodibe – this means developing proactive industry plans for the local sourcing of raw materials required for a tangible hydrogen economy. For Sasol, it means leveraging their position as world's leaders in Fischer-Tropsch technology and their capacity for research and development to advance hydrogen research and applications.

To this response, CBN posed two further questions: Can the hydrogen economy realistically compete with the coal economy in South Africa? And do we have the skilled professionals required to make the hydrogen economy a reality? Ramodibe's response must be commended for its realism, which can be summarised as: "Yes, but it is going to take a long time."

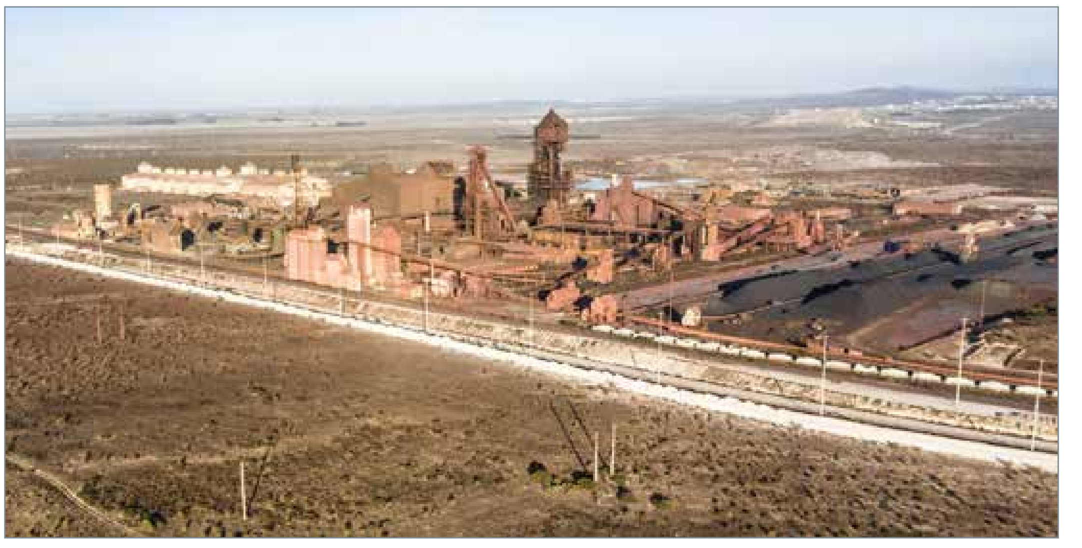
Verbatim, he said: "The coal economy was built over a long period of sustained investment while the hydrogen economy is still in its infancy. We are hopeful that with increased research and development this industry will flourish in years to come." Emphasis on *years.*

On the skills front, he said: "We are starting from a low base but with growth will come the need to build on what we currently have – this is characteristic of new industries. Even developed industries such as Germany and the US started from a low base but eventually grew." Emphasis on *eventually.*

Is this real or just a fantasy? The verdict is, for now: it is a fantasy.

But with the right stakeholders driving the fantasy forward – both in the private and public sector – the reality is well within reach. However, hydrogen enthusiasts must remember that a thriving South African hydrogen economy is not going to happen overnight. There is still nearer-term solutions required for the Just Energy Transition. Making the Hydrogen Economy a reality is going to require patience, coordination between multiple stakeholders, a range of new skills, and – perhaps most importantly – the capability to put plans into action.

Galvanising hope for Saldanha Steel?



A RE-OPENING of Saldanha Steel, which was mothballed in early 2020, on the back of markedly higher steel prices does not look on the cards...at least in the short term.

This is not good news for the struggling West Coast economy, although there will be come relief that Arcelor Mittal, the owner of Saldanha Steel, is now in a far healthier financial position.

AMSA recently reported well reinforced interim results to end June with revenues up a whopping 55% to R18.6 billion and bottom line swinging R2.5 billion into the black after being R2.6 billion in the red for the corresponding period last year. CEO Kobus Verster said this was the best performance by AMSA in the last decade.

What's more AMSA generated almost R1 billion in free cash flow, which helped slash debt from R3.7 billion to R2.7 billion.

So here is the scenario: A robust steel price - up 79% increase in average international dollar steel prices (with a 42% increase in realised rand prices) - and a bullish outlook for prices into the second half of the year, coupled with a company that no longer looks as fragile as it did in 2019/2020. Would these changed circumstances cause AMSA directors to revisit the decision to mothball Saldanha Steel?

It seems unlikely. At an investment presentation Verster was asked whether there had been a status change at Saldanha Steel, and whether the plant was again partially in operation.

He stressed Saldanha Steel - which employed around 1 100 full-time workers and contractors - was still fully in "care and maintenance" mode. "There is a small contingent of people that are ensuring the asset remains in good shape...starting the motors and greasing the pumps."

But optimists might see a glimmer of hope in Verster's contention that it was important to keep the asset in a fit state so that if, over the longer term, it became commercially sensitive, AMSA could re-start a plant that had not been vandalised.

Gut feeling is that a leaner and meaner AMSA - which has indicated the resumption of dividends is some way off - might be wary of making a rushed decision about Saldanha Steel.

What was Verster asked, though, was how did AMSA capitalise on "local ambitions" for green hydrogen and green steel production by revisiting the longer term 'green opportunities' for a plant like Saldanha Steel?

Earlier this year AMSA signed an agreement with a local independent power producer (IPP) to buy land next to the Saldanha Steel plant. The AMSA presentation also disclosed that Saldanha Works identified by SA-EU Partnership and CSIR for potential green DRI (direct reduction of iron) production opportunity for export purposes.

What's the local Tesla worth?

ELECTRIC vehicle manufacturer Tesla is worth an astounding $680 billion on the NASDAQ stock exchange - which translates roughly into R10 trillion.

Agilitee, which makes a claim at being the first electric vehicle manufacturer, is not quite revving at that heady valuation. In fact, according to CBN's calculations Agilitee carries an inferred value of only R20m - which would be the sum needed to buy just two or three Teslas.

Last month CBN reported that small Stellenbosch-based property company Visual International would undergo a radical transformation by acquiring Agilitee. Initially no price was disclosed for the deal.

But a recent announcement proposes that Visual issue 400 million new shares at no par value to settle the acquisition of Agilitee. With the Visual share price sitting at 5c at the time of writing, that would infer a value of R20m on Agilitee.

It is difficult to gauge the price tag placed on Agilitee, which at this juncture has not disclosed the value of its net assets and attributable profits. These will need to be released shortly.

As pointed out previously, Agilitee is currently controlled by entrepreneur and investor Mandla Lamba, who is already an indirect shareholder in Visual through investment company Verityhurst. Verityhurst, which was founded and is headed up by Lamba, recently bailed out a cash strapped Visual by subscribing for 133 million new shares to raise R5.3 million.

When the deal was first mooted Visual indicated Agilitee was at the forefront of the 4th industrial revolution in electric vehicles – pioneering, researching, importing, assembling, manufacturing, and franchising electric vehicles technology.

If there is a profit history at Agilitee, then CBN suspects it might be fairly abridged. As previously reported Agilitee's first motorbike and scooter models were only launched in Cape Town in May. But Agilitee's website suggests "the business will be highly profitable even in tremulous economic environments". The website states further: "Profits exceed industry norms. With Agilitee's aggressive expansion strategy, returns are expected to flourish."

Yoco cashes in

YOCO, the fast growing Cape Town-based fintech business, has underlined its longer term potential by raising a not insubstantial $83 million (almost R1.25 billion) in its latest fundraising effort.

Yoco, which has raised some $107 million (around R1.55bn) from investors so far, pitches its hand held payment devices and software applications mainly to small business merchants.

In less than six years, Yoco has processed over $2 billion in card payments, and currently services 150 000 small and micro-merchants all over South Africa.

The fresh capital raised will help Yoco accelerate the development of its financial ecosystem - which includes online and in-store payments, business software and capital - as well as expand its market presence beyond South Africa.

Some of the big investors chipping into the capital raising included Dragoneer Investment Group (which has previously backed fintech giants like Chime, Nubank, Mercado Libre, Square and Klarna), Breyer Capital, HOF Capital, The Raba Partnership, 4DX Ventures, TO Ventures and several current and former executives from global tech leaders such as Coinbase, Revolut, Spotify and Gojek.

Existing Yoco investors - like Partech, Velocity Capital, Orange Ventures, Quona Capital and Old Mutual's Futuregrowth - also participated in the fund raising exercise.

Katlego Maphai, the CEO of Yoco, said it was the company's quest to break barriers and create access to financial services for millions of small businesses across the continent.

"Looking ahead, this investment will unlock capacity for us to accelerate product development for our merchants and continue on our growth trajectory in South Africa and beyond."

"He said Yoco's growth has been driven almost exclusively by small, independent businesses that were previously cash-only due to the complexity and high costs of existing alternatives.

Carl Wazen, Yoco's chief business officer, said that despite Yoco being the largest payments platform in South Africa, there was still ample growth opportunities.

"There are over six million small businesses in South Africa and well over 100 million across the Middle East and Africa that still transact only in cash."

He said recent consumer behaviour showed a shift away from cash and businesses have to rapidly adapt to this change.

"This presents a huge opportunity and it is our mission to support that transition."

Aside from reinforcing its market presence in South Africa, Yoco has plans to expand into African markets and the Middle East. Wazen says the medium term goal is to reach a million merchants.

‘Building back badly’: Global power sector emissions soar

25th August 2021
Authors: Dave Jones, Nicolas Fulghum, Peter Tunbridge

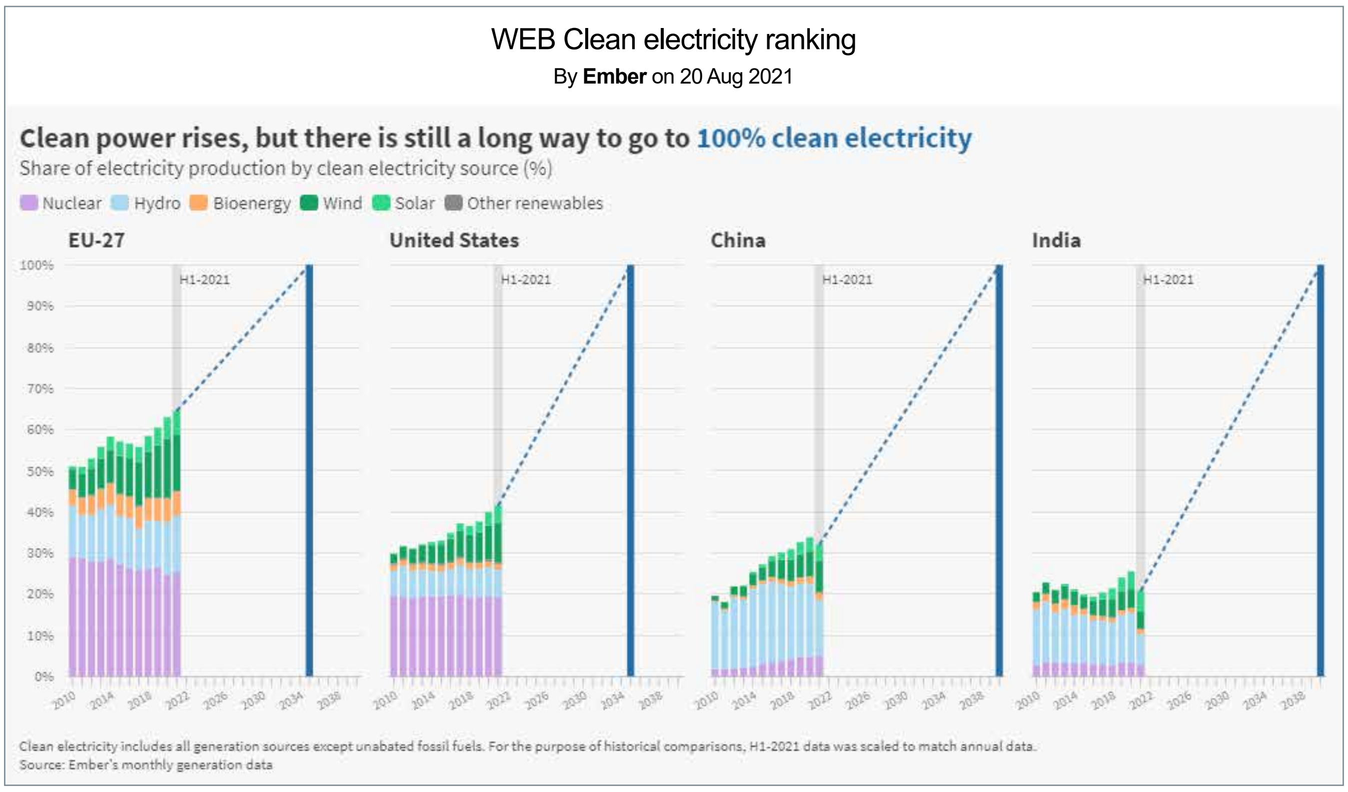
THIS report provides a mid-year update to Ember’s annual Global Electricity Review. It compares the first six months of 2021 (H1-2021) to the same period in 2019 (H1-2019), to show for the first time how the electricity transition has changed as the world rebounds from the impact of the pandemic in 2020.

We have researched monthly electricity data to June 2021 for 63 countries covering 87% of the world’s electricity production. We have made this data available in full for all to use.

Key findings

Rising global electricity demand outpaced growth in clean electricity, which led to an increase in coal power, raising CO2 emissions. Global power sector emissions rebounded in the first half of 2021, increasing 12% from the lows seen in H1-2020, so that emissions are now 5% above the pre-pandemic levels of H1-2019. Global electricity demand also rose by 5% in the first half of 2021 compared to pre-pandemic levels, which was mostly met by wind and solar power (57%) but also an increase in emissions-intensive coal power (43%) that caused the rise in CO2 emissions. Gas was almost unchanged, while hydro and nuclear saw a slight fall. For the first time, wind and solar generated over a tenth of global electricity and overtook nuclear generation.

No country has yet achieved a truly ‘green recovery’ for their power sector, with structural change in both higher electricity demand and lower CO2 power sector emissions. Several countries including the US, EU, Japan and Korea achieved lower power sector CO2 emissions compared to pre-pandemic levels – with wind and solar replacing coal – but only in the context of suppressed demand growth. Countries with rising electricity demand also saw higher emissions, as coal generation increased as well as wind and solar. These ‘grey recovery’ countries are mostly in Asia: China, Bangladesh, India, Kazakhstan, Mongolia, Pakistan and Vietnam.



China needs to urgently expedite its electricity transition. China’s electricity demand rose by 14% from H1-2019 to H1-2021 and is approaching EU per capita levels. Over two-thirds (68%) was met by coal power and the rest by wind and solar (29%). China was responsible for 90% of the world’s increase in electricity demand and 43% of the world’s increase in wind and solar during this period. It added more coal power (+337 TWh) than the EU’s total coal generation in H1-2021. As a result, China’s share of global coal generation rose from 50% in 2019 to 53% in H1-2021.

**Clean electricity includes all generation sources except unabated fossil fuels*

Conclusion

It’s a long, but urgent journey to 100% clean electricity. The IEA’s Net Zero 2050 Roadmap shows that advanced countries must get to 100% clean electricity by 2035, and all countries by 2040. The EU and the US are slowly rising to this challenge, as the EU’s Fit for 55 package assures a fast step-up in clean electricity and Joe Biden pledged 100% clean electricity by 2035. China and India’s task is harder: their electricity demand is rising faster, and they have a lower proportion of clean electricity to start with. Wind and solar break the barrier of a tenth of the world’s electricity generation – the electricity transition is happening, it’s just not happening fast enough.

More than any other sector this decade, the electricity transition will define how low we can keep global temperature rises. But rising CO2 emissions right now is a huge red flag that the world is off-course for 1.5 degrees.

This article is abridged. For the full report visit: www. https://ember-climate.org/project/global-electricity-review-h1-2021/

Smart satellites – saving businesses, saving lives

IN the event of a natural disaster or civil unrest, damage to terrestrial communications infrastructure, combined with exceptional spikes in demand, can leave users cut off at the worst possible time. Sudden loss of communications can impact on business operations and on the ability of first responders to assist victims in emergencies.

Concerns about the resilience of existing communications network architecture (which is often based on a single technology, due to the need to reduce CAPEX and operational costs) have led both enterprises and emergency service providers to question the viability of relying on a single source of communications, and have spurred the search for alternative ways of maintaining contact that are better able to survive unprecedented events, whether these are caused by the weather or social upheaval.

Today’s Smart Satellite services – such as Twoobii from Q-KON – meet the need for resilient yet cost-effective communications services that can be easily integrated into existing networks and provide network-independent, virtually uninterruptible connectivity that can allow businesses to continue to function as usual, and first responders to gather and share mission-critical information.

“The rationale for the use of Smart Satellite services in emergencies is well established – they are easy to set up and power, independent of vulnerable equipment like towers and can be easily incorporated as a default redundancy layer,” commented Dr Dawie de Wet, Group CEO of telecoms solutions provider Q-KON. “Advances in technology – and the introduction of pay-per-use pricing plans – are strengthening the case for satellite connectivity as an everyday communications option, not just for when disaster strikes,” he added.

Companies and service providers that adopt this approach are ideally placed to continue making money or assisting people when other systems are rendered inoperable, as they will already have satellite equipment installed and will have completed billing and network integration in advance. In this way, seamless operability can be ensured, even during unprecedented crises.

Concerns over the ability of conventional communications services to deliver failsafe connectivity, combined with growing awareness of the improved signal quality and reduced costs of satellite, have created a ‘perfect storm’ of circumstances that are prompting a reappraisal of differing technologies.

When the wind blows…

When central Mozambique was hit by Cyclone Eloise in January 2021, Twoobii Smart Satellite services proved their worth by enabling two local businesses to remain in contact with the outside world, despite extreme flooding and winds of up to 160 km/h.

“Twoobii was our only lifeline,” commented Willie Prinsloo, CEO of The Buffalo Camp Sofala. “None of our local land-based systems were able to withstand the impact of Cyclone Eloise, but the fact that our satellite communications remained operational throughout meant that The Buffalo Camp could function as a command centre for coordinating relief efforts during the cyclone, and while emergency services dealt with the aftermath,” he added.

When the chips (and the fibre and GSM) are down, Smart Satellite services can make a difference both during extreme weather, and during everyday operations.

For more information visit: https://twoobii.com/

VWSA wins two awards at annual Exporters Eastern Cape awards

VOLKSWAGEN Group South Africa (VWSA) was honoured with two category awards at the annual Exporters Eastern Cape awards.

The virtual awards ceremony was held on Friday 20 August to give recognition to the province’s leading exporters.

During the awards, VWSA received the SJM Flex Environmental award for the eighth year. This award is given to an ISO 14001-accredited exporter who pursues excellence in environmental management. The company was also crowned the Best Exporter in the OEM category.

“To win these awards under normal circumstances is an honour; to win during a pandemic that temporarily halted exports and brought challenges to all business is an absolute privilege,” said Dr Robert Cisek, VWSA Chairman and Managing Director. “We are committed to manufacturing quality vehicles without compromising on our responsibility of environmental protection, and these awards are recognition that we are on the right path in this regard.”

In 2020 VWSA exported a total of 81 935 Polos and 1 321 588 components, including engines, to export customers across the world.

Exporters Eastern Cape has been operating in the Eastern Cape for 41 years and is aimed at organisations involved in exporting, either directly or indirectly, and for organisations with an interest in exporting. These organisations represent industries such as automotive, pharmaceutical, agriculture and services.

The judges for the Exporters Eastern Cape Awards come from varying backgrounds and sectors.

UIF TERS lifeline 'hanging on a thread' while desperate staff run out of oxygen

HOSPITALITY businesses that have barely been able to operate since COVID regulations were implemented in March 2020 are running out of oxygen as they wait for UIF TERS system errors and bottlenecks to be resolved.

"We acknowledge that UIF TERS has paid out billions to businesses and their staff in the past year. We are also grateful that government has designated our sector as one that qualifies for UIF TERS. However, the incredible difficulty that many in the hospitality sector are experiencing to access this only form of financial relief open to us, has left us desperate," says Rosemary Anderson, FEDHASA National Chairperson.

> "We are not insensitive to the fact that the UIF must be drowning in applications..."

"For many staff in our sector, UIF TERS is the only lifeline they have and it appears to be hanging on a thread," says Anderson.

FEDHASA members highlight daily how their experience of the process and system is fraught with inconsistencies and issues. From the call centre number (0800 030 007) being disconnected, or when it was working manned by call centre agents who were not trained to deal with enquiries, to SARS errors which appear to be the cause of thousands of claims not being processed.

"Why should employees and employers who have faithfully contributed to UIF for years – now not be able to access their contributions, now more so when they are desperately needed than in the history of UIF. We must not lose sight that these funds comprise of the employee and employer's contributions. It is their money.

"It is very wrong for our tourism and hospitality industry not to be able to access their contributions, purely because the call centre number does not work, there are administrative inadequacies and system verification errors between SARS and uFiling," says Anderson.

Communication coming out of the UIF has been exceptionally disappointing, turnaround times unacceptably long and the process extremely complicated, adds Anderson.

"Our industry has held webinars and offered other forms of advice to try to assist tourism and hospitality businesses to access UIF TERS funds – but what we are told by UIF TERS, appears to work only in theory but not in practice. It is very upsetting to us that we are not able to help our industry – but currently the system our members are trying to access is simply dysfunctional."

There are definite solutions to the problems currently being experienced, which could be solved with streamlining the process and a real commitment within those in UIF to find the source of the problems and rectify them.

"We are not insensitive to the fact that the UIF must be drowning in applications, appeals and communication from the various sectors affected. We simply ask the UIF to work with us so that we can help to convey better processes to our industry and find solutions to those bottlenecks if we are contributing to them. It will benefit everyone – we are all in the same boat and need to work together." concludes Anderson.

The importance of tracking and fleet management

OWNING and operating vehicles efficiently, no matter the industry, is reliant on information. Having the correct information in a tangible format is imperative to making the right decisions.

"No matter your business, if you use vehicles, then Ctrack can help. During Ctrack's 30-year history, we have developed cutting edge tracking and fleet management hardware and software solutions. We can also tailor-make analytics to aid with short and long-term decision making," comments Hein Jordt, Managing Director of Ctrack SA.

A comprehensive fleet management solution ensures that safety and security risks such as dangerous driving, safety, driver fatigue, theft, hijackings and area management can be mitigated.

Improved productivity is guaranteed when business owners know how their vehicles are being used. Efficient fleet management will ensure the avoidance of unnecessary costs incurred by factors such as speeding, accidents, fuel consumption and harsh driving.

"Vehicle control becomes increasingly difficult as the fleet grows and routes change. Ctrack has the right solutions in terms of productivity reports, route deviation details, time adherence insights and more," added Jordt.

Daily vehicle health checks and odometer or hour readings make it easier to schedule maintenance, remain up to date with vehicle license renewals and keep an eye on their overall condition.

Whether your fleet consists of motorcycles or mining and yellow equipment or whether you operate within airports or the agricultural sector, Ctrack has developed and perfected bespoke tracking and fleet management solutions for a wide variety of industries. Compact, battery-operated tracking devices mean that anything can be tracked, from combine harvesters to small packages.

Ctrack offers a variety of technologies for positive and accurate driver identification. These technologies include Dallas iButton keys and RF ID cards that make it simple to determine which driver was driving what vehicle, in what manner and when. Ctrack also has the ability to link driver's tags to specific classes of vehicles to ensure that drivers only operate the vehicles they are licensed for. A starter lockout can be installed to prevent the vehicle from being started without the correct authorisation via the driver identification system. The recent rollout of AARTO also means that it is now even more important to accurately identify and manage drivers of vehicles within your fleet.

The Iris camera solution records in all directions of the cabin, making it perfect for driver training and incident management. A breathalyser ensures that the vehicle cannot be started if the driver is over a pre-determined alcohol limit. An on-board weighing system prevents vehicles from being overloaded, and a tip sensor aids in the efficient management of loads. On-board telematics monitor engine parameters such as excessive idling and high rpm, as well as fuel consumption and fuel level.

Working in conjunction and with the ability to monitor a large number of parameters across a large fleet is a variety of software solutions. Assets are always visible via devices such as a cell phone, tablet or computer thanks to bespoke software such as the Ctrack Mobi application and an Internet connection. Driver Mobi allows drivers to manage themselves via their smartphones. Drivers see their own scores and driver behaviour on journeys. They can also submit their business or private mileage declarations and complete vehicle checks.

Managers looking for a more advanced solution will find that Ctrack Maxx ticks all the right boxes. This powerful server-based fleet monitoring and management tool combine advanced vehicle tracking with a sophisticated fleet analysis package.

THE BEE IN MY BONNET COLUMN

Have the Government finally run out of other people's money?

YOU are encouraged to read RW Johnson's excellent article 'The slow process of dispelling ANC illusions about privatisation' – www.politicsweb.co.za on 19th August, which brought into focus the oft repeated phrase attributed to the late Margaret Thatcher – "The trouble with socialism is that you eventually run out of other people's money".

Johnson probes the recent announcement by Pravin Gordham – Minister for Public Enterprises and Portia Derby, the CEO of Transnet to raise R100 billion from the private sector to be spent, we are told, to hugely expand and modernize the Durban container facility.

Another example of closing the stable door after the horse has bolted springs to mind – the 'plan' is to expand the Durban container handling facility from a claimed 2,9 million containers per annum to 11 million pa by 2032.

That, the duo says, requires R100 billion of investment, and follows a recent World Bank study of 351 ports worldwide which places Durban stone last and our other ports, Cape Town and Ngqura/ Coega in the bottom four.

They would probably need a similar amount of spending if they too are to become competitive.

With Government debt servicing running at more than 80% of GDP (!) trying to borrow more money from overseas investors at high interest rates due to our Junk status isn't a sensible option (!!) so the pair's fanfare announcement that a major SOE is now going to do us all a favour by allowing the private sector to invest in the country's infrastructure seems laughable.

Especially as no mention has been made of an equity stake or private sector management intervention in return for this mammoth investment; in fact quite the opposite if the statement from Transnet chairman Popo Molefe is to be believed that the State will "continue to own the assets" and presumably continue to (miss) manage them. So with no sell off in sight, what investor in their right mind would put billions of shareholders money into such a dodgy deal? And is there that much of surplus cash floating around anyway?

As Margaret Thatcher found out in the 1980's when trying to privatise the UK's loss making SOE's, there was no appetite for investment in such entities while the management and union stranglehold remained in place: in fact the very elements that had caused the decline in first place. Sounds familiar?

Thatcher had the guts, courage and determination to take on the unions and eventually after many bloody battles, managed to knock these institutions into a shape that was attractive for the private sector to invest and manage, although it must be said, not always in the public's interest.

While Transnet management, the DOE, and COSATU continue to follow failed socialist dogma, this will not happen here, so where is the money to come from in fulfilling Ramaphosa's grand plan of putting the country back to work through a R500-billion infrastructure spend?

More dodgy deals like the highly suspect SAA 'privatisation' using PIC pension monies and IDC shady investments no doubt.

Eish.

New report exposes myth of clean coal

A new report by air pollution expert, Dr Ranajit Sahu, confirms that South Africa's proposed 1 500 MW of new coal-powered electricity generation will cause significant air pollution and greenhouse gas emissions, even if the cleanest technology currently available is used.

IN 2019 the South African government proposed adding 1 500 MW of new coal generation in the country, as part of the Integrated Resource Plan for Electricity (IRP).

The IRP claims that such coal generation will be cleaner because high-efficiency, low-emission (HELE) generation technology will be used, although it does not state which kind.

Dr Ranajit Sahu, an engineer with over 30 years' experience in power plant design, assessed the potential air emissions of the most likely types of HELE technology that could be used as part of a report commissioned by the Centre for Environmental Rights (CER) for groundWork, the Vukani Environmental Movement in Action, as well as the African Climate Alliance.

Sahu found that even in the best case scenario in which the cleanest available technology is used, large quantities of greenhouse gas emissions are unavoidable.

In particular, Sahu considered two likely technologies that could be used: pulverized coal units and circulating fluidized bed technology.

He found that pulverised coal units - even when operating at ultra-supercritical efficiency - will not be able to capture their emitted carbon dioxide due to extremely high costs.

In the case of circulating fluidized bed technology, which is considered preferable by the IRP due to its ability to handle low quality coal, Sahu found that this technology emits from two to ten times more nitrous oxide than pulverized coal technologies. Nitrous oxide is a potent, long-lasting greenhouse gas with a global warming potential 300 times that of carbon dioxide.

"I want to stress that contrary to implications in the 2019 IRP and the Ministerial determination, there is simply no such thing as "clean coal", regardless of whether HELE technologies are used to minimize air emissions from coal (or gas derived from coal)," Sahu says.

The report is the latest piece of research that supports the view that new coal generation in South Africa will be unnecessary, costly and highly detrimental to the environment. It follows previous investigations into the coal cycle (mining, production, supply, and disposal) that prove that "clean coal" is an impossibility.

"New coal generation flies in the face of the South African government's obligation under international and South African law, including the South African Constitution, to take all reasonable measures to protect its people from the impacts of climate change."

A copy of the report, Potential Impacts of Proposed New Coal Generation, by Rd. Ranajit Sahu is available from the CER website: www.cer.org.za

The report is the first in a series of expert analyses of new coal generation in South Africa, details of which will be published shortly.

Dis-Chem - growing small businesses results in entrepreneurial success

IN acknowledgment of the call by government to boost local manufacturing and job creation, Dis-Chem is working in close collaboration with the Department of Small Business Development in a national drive to stock more locally produced retail goods.

The initial goal is for major retailers, such as Dis-Chem, to stock about 400 locally produced items, in time rising to over 2 000, as part of a national strategy to grow manufacturing locally.

This comes at a time when many small and medium-sized enterprises (SMEs) are in desperate need of life support during the Covid-19 pandemic and consequent economic lockdowns. The sector remains vital to South Africa's recovery, notwithstanding growing numbers of liquidations. A Bureau of Economic Research study estimates the number of SMEs to be in the region of 2.2-million. These contribute considerably to the South African economy and create over 11 million jobs.

Estimates vary widely, because even without a crisis such as the pandemic, between 70% and 80% of start-up businesses typically fail within two years. Such numbers are staggering and tell a tale of the need for support to ensure more businesses survive and create employment.

"We have a long tradition of celebrating those pioneers who dream big and do whatever is needed to bring an idea to fruition. Dis-Chem started as a small business with one store, so we understand what it takes to grow an organisation. As a company that supports businesses, we support and mentor entrepreneurs and we are fortunate to have partnered with some small businesses that have grown significantly in recent years," says Saul Saltzman, executive director at Dis-Chem.

"We are both gratified and excited that we can tell the real stories of everyday South African business owners. Through them we hope to educate, empower, and inspire more entrepreneurs to pursue their dreams, and ultimately contribute to the development of our country."

Dis-Chem is renowned for its health products, a category that has grown in recent years through support of small suppliers whose products are ideally suited to Dis-Chem's range and meets their quality criteria.

True Earth

"From a commercial perspective Gauteng-based, True Earth, manufacturers of gluten free cereals and snacks, was given an opportunity to launch its products with us and grow their business," says Saltzman. Dis-Chem provided guidance to Nokwanda Shabalala, founder of True Earth, on the typical manufacturing standards expected by a firm like Dis-Chem, and assisted her to select the correct manufacturing partners.

Irene's Gourmet

Gauteng-based Irene's Gourmet has been a growing supplier of quality vegan products with a focus on high nutrition and ethically sourced ingredients. The business has been a supplier to Dis-Chem for the past five years.

Usisi Brands

Sion Venter, director of Usisi Brands in Cape Town has developed a variety of food herbs and spices targeting people looking for healthy alternatives which are sugar-free, non-irradiated, msg-free and contain no other fillers. Usisi has largely targeted the uniquely ethnic market, but as a healthy alternative to what is already available.

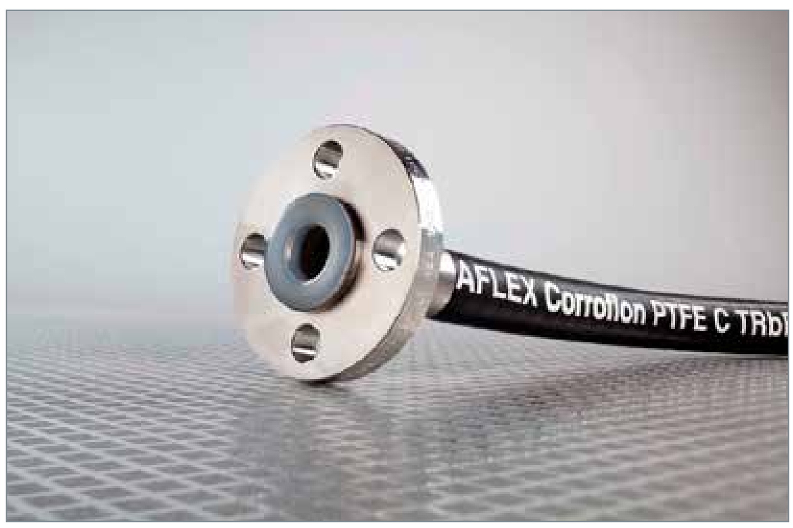
Case Study: French company solve hose problems transferring delicate fluids

FRANCE based Oril Industrie produces nearly 2 000 tons of active ingredients per year which are used in prescription medication in the fields of cardiology, oncology, neuropsychiatry, diabetes and venous insufficiency. The plant, located in Bolbec, Normandy, employs 800 people. The site's equipment from various manufacturers is fitted with approximately 1 000 hoses, most of which are used for the transfer of solvents. Some provide anti-static protection while others located in non ATEX zones are simply made of PTFE.

Oril Industrie's plant was experiencing breakage issues with some of its existing hoses. As it was already equipped with a number of hoses from Aflex Hose, part of Watson-Marlow Fluid Technology Group, the Company consulted Watson-Marlow regarding the installation of 30 new hoses.

Corrosion resistant even under heavy use

Hoses were required for the transfer of highly concentrated hydrochloric and sulphuric acids, at a maximum pressure of 10 bar. Anti-static protection was therefore essential. It was also imperative that all components comply with industry standard certifications, ATEX zone 2 as well as the materials 3.1 certificate. With temperatures likely to reach 50°C, Oril Industrie requested hoses with a thermal protection sheath. The hoses, which were to be subjected to intensive handling, had to be resistant.



Watson-Marlow recommended the Corroflon hose from Aflex Hose as it is designed for the transfer of chemical and process fluids. Its internal shallow convoluted structure allows for a full flow rate while ensuring exceptional flexibility.

The selected model has been tested at an operating pressure of 41 bar, significantly higher than that required. Aflex is the only manufacturer of PTFE hoses guaranteeing a minimum liner thickness of 1.5 mm for hoses size 1 and above. This ensures that the tubing is sufficiently resistant to prevent its profile altering under internal pressure, removing the consequent risk of increased porosity and premature breakage.

Corroflon met all the specificities of the application and is compliant with all required certifications including EN16643:2016, ATEX, FDA, 3-A 62-02, and the materials 3.1 certificate.

Recognised quality

Oril Industrie selected an anti-static PTFE internal liner as well as a polypropylene external braid. This type of braid is often preferred over stainless steel braids in applications involving frequent handling as the hose is able to move and withstand temperatures from -30°C to +100°C. Polypropylene braids are also lighter, withstand chlorine corrosion and generally provide greater resistance to chemical products.

Corroflon's main advantage versus competitive products is its use of Hastelloy external braids and internal helix wires. Hastelloy C276 braids are used when chemicals, such as hydrochloric acid in the case of Oril Industrie, create severe corrosive conditions. The risk associated with this acid is the potential diffusion through the PTFE liner causing braid corrosion. With Hastelloy, both the bursting pressures and the maximum operating pressures are reduced by 80%, significantly reducing corrosion risk.

Oril Industrie recognises the quality of Aflex Hose products, as well as the extended service life they provide where quality trumps cost. The collaboration with Watson-Marlow is ongoing and Oril Industrie plans to order more products.

For further information, contact: info.za@wmftg.com, tel: 011 796 2960 or visit the website: https://www.wmftg.com/en-za/

Cape Town's Business Hub number 1 for start-ups

FOR the second consecutive year, Cape Town has been ranked the number 1 city in South Africa and Southern Africa for start-ups, according to this year's Start-Up Ecosystem Report from the global research centre, StartupBlink.

The city also moved up one spot in the global ranking to 145th place.

Cape Town is an ideal place to locate for Software and Data, Education and Fintech start-ups,' says the research centre.

The research centre cited that one of the reasons for the city's high ranking is the "strong political will" that drives investment into Cape Town.

The hub was launched two years ago this to assist small businesses and entrepreneurs to find solutions that would make them more competitive and resilient. The Hub team fields queries relating to business registration, access to finance, permits, assistance with accessing markets and tenders, among others.

In the last two years, The Business Hub has:

- Responded to 4 990 service requests/ enquiries
- Resolved 98% of requests/enquiries within two working days
- Facilitated 61 red tape business cases

In March this year, the Hub launched a mobile help desk to go directly into communities and assist local businesses where they are based. At these four activations, the mobile team has assisted 127 clients in Delft, Mitchells Plain, Bellville and Strand.

'A healthy business ecosystem in communities is good for local residents and the broader Cape Town landscape. By meeting businesses where they are, we reduce the cost and time it would take for them to come to us,' said Alderman Vos, City of Cape Town's Mayoral Member for Economic Opportunities and Asset Management.

One of the thousands of business owners who have been supported is Glynn Mashonga, who started her business, Globescope Security Solutions. One of her biggest struggles was accessing funding. After contacting The Business Hub, Mashonga attended one of the City's Smart Supplier Programmes where she received training on pitching to major corporate clients. The training she received helped her to land more and bigger clients including IBM, ABSA bank, and UK-based corporations.

Another example is Gary Styles, the owner of Custom Office, a furniture manufacturer and wholesale supplier who said that The Business Hub helped him during a particularly difficult time.

'At a time when it felt like I was on my own in trying to figure out how to operate, retain my workforce as well as to survive, the fantastic and speedy help I received from the City's Business Hub showed that I was not alone and that the City was hard at work to help businesses to survive and thrive. I am immensely happy with and thankful for the support I received,' said Styles.

Alderman Vos said these were perfect examples of the impact of effective communication and collaboration between the City and small business owners.

To speak to the hub's team about your business needs, contact them on business.support@capetown.gov.za or 021 417 4043.

J. Peter Pham to participate at African Energy Week in Cape Town

FOLLOWING several other international VIP confirmations, J. Peter Pham, the former U.S. Special Envoy for the Sahel Region of Africa, has issued his support of and participation at African Energy Week (AEW) 2021 in Cape Town. Pham is focused on enhancing security and governance, social progress and economic development in Africa, and will promote U.S.-Africa partnerships and the role of Africa in the global energy transition in Cape Town, ushering in a new wave of investment and bilateral cooperation.

Pham played an instrumental role in coordinating relations between the U.S. government and African stakeholders with his service as the U.S. Special Envoy for the Great Lakes Region of Africa from 2018-2020, and as the first-ever U.S. Special Envoy for the Sahel Region from 2020-2021. With a focus on enhancing cross-border security and contributing towards both the Sahel and Great Lakes region's political and economic stability, Pham aims to unite U.S. stakeholders with African opportunities, driving regional energy and economic growth.

"AEW 2021 welcomes all international stakeholders to come and engage with African partners. J. Peter Pham will be instrumental in not only facilitating the critical partnerships that will drive Africa's energy success, but driving investment in African developments by emphasizing the continent's role in the energy transition. By introducing U.S. policies, solutions, and stakeholders to African markets, emphasizing integration and regional collaboration, Pham will help position Africa as a united and formidable force on the global energy stage. Africa will play a leading role in the energy transition and both Pham and AEW 2021 are committed to emphasizing this," stated NJ Ayuk, Executive Chairman of the African Energy Chamber.

By participating at AEW 2021 in Cape Town, Pham will directly engage with African stakeholders, governments, and private sector executives, offering key insights into how the continent can drive regional collaboration and development. Pham's extensive experience in both international relations and Africa positions him as an expert in regional affairs, and by driving a strong narrative on the value of cross-border integration as a key driver in economic growth, Pham will contribute to the regional narrative, emphasizing unity and market-driven policies.

Pham is a strong advocate for U.S.-Africa partnerships and will promote American strategic interests in Africa at AEW 2021 in Cape Town. With many African countries seeking international partners to help expand their energy sectors and initiate sustainable economic growth, Pham's participation at AEW 2021 will enable the discussions to start, as he will introduce potential partners, invite further collaboration, and facilitate long-term bilateral agreements between the U.S. and Africa.

For more information about Africa's premier energy event, visit www.AEW2021.com or EnergyChamber.org and/or email Amina Williams at amina.williams@energychamber.org

Affordable, inclusive, and online: UoPeople opens enrolments

ENROLMENTS for the 2021-2022 academic year are now open worldwide, including South Africa, for University of the People – the first non-profit, tuition-free, American-accredited online university. Open to all qualified applicants, the university offers affordable, accessible, quality higher education opportunities, helping the 'missing middle student demographic' overcome financial, geographic, political and personal constraints keeping them from tertiary education studies and, ultimately, from better employment opportunities.

In South Africa, approximately 1.4 million individuals have completed secondary education but have been unable to enrol in a bachelor's degree programme due to limited seats or financial constraints. These missing middle students are those who cannot afford to attend university but are above the income threshold to qualify for governmental funding.

With education critical to overcoming poverty, unemployment and social inequality in South Africa, there is a dire need for more affordable and accessible, higher education institutions with alternative funding models, as highlighted by the #Feesmustfall movement that started in 2015. However, with the unemployment rate currently at 32.6%, access to tertiary institutions is not enough - graduates need to be employable when they enter the job market.

At UoPeople, the costs of attending university have been removed to be more inclusive and the courses that are offered are in high demand in the job market, resulting in 92% of its graduates worldwide securing employment post-graduation. Students are prepared for entering the world of work via a Career Services Centre, which provides career preparation support. In addition, as classes are made up of individuals from 20-30 different countries, students are exposed to other cultures and ways of thinking, preparing them for today's global work force where they are likely to work in international companies and interact with people from around the world. Many UoPeople graduates have gone on to work at top international companies and organisations such as Google, IBM, Apple, Dell, Microsoft and even the United Nations.

UoPeople does not charge for online courses, course materials or annual enrolment, however, a small application fee and modest course assessment fees are charged to cover the university's overall operating costs. While traditional on-campus bachelor's degrees can cost approximately R150 000, a bachelor's degree from UoPeople will cost roughly R69 000 – reducing the total cost by more than 50%. Scholarships are available for those who cannot afford the nominal fees.

For local student Shannon Duncan, UoPeople presented an opportunity to get a quality higher education affordably, while being flexible enough to allow her to work while studying so she could pay her fees. "I fall into that in-between space where my income is not low enough to get funding but not high enough to be able to afford university. UoPeople is affordable and not being tied down to physical classes means I can earn money while working towards getting my health science degree."

Academic programmes offered

UoPeople offers Bachelor's degrees in the high job demand academic programmes of Business Administration, Computer Science, and Health Science as well as a Master's in Education and an MBA.

The university collaborates with leading institutions, such as Harvard Business School Online, University of Edinburgh, New York University and McGill University in Canada, to create even more opportunities for its students. UoPeople gained accreditation in 2014 from the Distance Education Accrediting Commission, which is officially recognised by the US Department of Education and the Council for Higher Education Accreditation.

The fees structure

UoPeople has a very simple tuition-free higher education model, where most of the costs of attending university have been removed. There is a one-time application fee of $60 (approximately R880) and at the end of each course there is an assessment fee due: $120 (approx. R1 800) for undergraduate courses and $240 (approx. R3 500) for graduate courses. Financial aid is available for those in need. The total approximate costs to earn a degree at UoPeople are:

- Undergraduate degree: $2 460 (*R36 200)
- Bachelor's Degree: $4 860 (*R71 500)
- MBA: $2 940 (*R43 200)
- M.Ed.: $3 180 (*R46 800)

*Dependent on the dollar versus rand values (On 29 July - R14,71 to the dollar)

How to apply

Visit the website at: www.uopeople.edu to see the admission requirements. Then, simply complete the online application form and pay the one-time application fee. Applications are always open and are currently being accepted for Term 2 of the academic year 2021-2022, which starts in November.

New sensing technology detects difficult targets - no need for complex installation design

OMRON has launched a new E3AS-HL CMOS Laser Sensor with industry-first sensing technology that significantly improves detection capability. Reliable detection of difficult-to-detect targets helps eliminate the need for time-consuming installation design and adjustment at equipment commissioning.

Detection using conventional reflective photoelectric sensors is affected by the target colour, material, or surface, and human experience and skills are required to design and adjust the sensor installation for each target. This issue often arises in the automotive and food industries where various targets with complex shapes and glossy surfaces are detected.

The new E3AS-HL CMOS Laser Sensor can reliably detect targets that cannot be detected with reflective photoelectric sensors.

Its industry-first sensing algorithm reaches high-speed sampling at 10 000 times per second and OMRON's unique accumulation processing increases sensitivity by amplifying the slightest amount of light bounced off the target. The manufacturing technology adjusts the receiver lens position in the sensor to the micro meter level, enabling reliable detection of any target colour material, and shape.

These technologies allow the E3AS-HL Sensor to reliably detect curved and irregular shaped glossy automotive parts and multi-coloured and glossy food and packages. The E3AS-HL Sensor can be used where reflective photoelectric sensors were used and helps significantly reduce the time required to adjust the sensor installation position and angle and the threshold values.

Key Features:

- Reliable detection of difficult objects reduces equipment design and commissioning time
- Increased equipment design flexibility reduces design time
- Antifouling coating on sensing surface ensures stable operation even in harsh environments (Patent Pending*4)
- OLED display and teaching enable easy, quick, and optimal setting

For more information contact: Omron Electronics (Pty) Ltd, Tel: 011 579 2600 Email: info.sa@omron.com website: www.industrial.omron.co.za.

Will RCL changes feed into acquisitions?

Out: Miles Dally

In: Paul Cruickshank

MILES Dally, the long serving CEO of Remgro-controlled consumer brands giant RCL Foods, will retire at the end of November - perhaps heralding a new strategy to build up the grocery brands business more aggressively.

Dally will be succeeded by Paul Cruickshank, who currently serves as chief operating officer of RCL's Food division. Cruickshank takes over at a critical junction for RCL, which has already separated its Rainbow Chickens division under new management lead by former Country Bird Holdings (CBH) CEO Martinus Stander.

Food sector sources are speculating that with Cruickshank at the helm RCL might look to aggressively broadening its higher margin grocery brands basket - which includes brands like Ouma (rusks), Nola (mayonnaise), Sunbake (bread) and Supreme (flour) as well as an array of pet food products.

An obvious deal would be for Remgro to merge its Siqalo Foods business - acquired from Unilever over two years ago and comprising spreads brands like Flora, Stork and Rama - into RCL.

But there is also some conjecture that smaller local food companies like Libstar and RFG might hold brands that whet RCL's appetite.

Libstar, which still has a private equity player holding sway, has a very profitable niche in the dairy segment with an array of cheeses and yoghurts and a decent position in spices and sauces. The dairy segment could be a valuable add on of Siqalo is added to RCL. Libstar also has products - mostly packed for supermarkets - that cater for the increasingly popular banting and vegan diets.

While it seems doubtful RCL would be keen on canned fruit and juices, RFG has a pie business that could easily slot into RCL's existing Pieman's business.

SAPMA aims to protect paint retailers from state "invasion"

SAPMA will attempt to counter "preposterous" new proposed government regulations for hardware and paint retailers, says Tara Benn, the association's executive director.

THE SA Paint Manufacturing Association (SAPMA) has established a sister organisation, the Retail Hardware and Paint Association, to intensively lobby and represent the interests of beleaguered hardware and paint retailers.

Tara Benn, executive director of SAPMA, says the association's retail members now, more than ever, need a dedicated effort to effectively safeguard and stand up against increasing "government regulation" of private wholesale and retail companies. SAPMA last year played a significant role in the effort to lobby government to relax lockdown restrictions which, at the onset of the pandemic, severely threatened the continuity and survival of hardware and paint outlets.

Benn says the Department of Trade, Industry and Competition (DTIC), and more recently the Department of Employment and Labour (DEL), are planning to regulate the hardware and paint retail sector in the near future. "Two structures are currently under discussion: a Retail Charter Council, for BBBEE Purposes, and a generalised Retail Bargaining Council, designed to regulate wages and conditions of employment," Benn states. "Furthermore, the Construction Sector Charter Council is already claiming that retail paint and hardware companies fall under its scope. This means that such companies are subject to the Council's scorecard for BBBEE purposes.

"The most immediate threat that SAPMA intends to deal with, on behalf of the Retail Hardware and Paint Association, is to counter the existing plans by the Black Business Council for the Built Environment, together with Master Builders South Africa (the secretariat of the newly-established Construction Alliance SA), to collaborate with the DEL and DTIC to implement preposterous new employment equity targets for hardware and paint retailers. The stated aim of the Director General of Employment and Labour is for the DEL to introduce a 'Certificate of Compliance' designed to allow only Level 1 and 2 measured entities, to tender and contract for supply chain providers into the Public Sector or to be listed on the Preferential Supply-Chain Database of the DTIC," Benn adds.

She says in addition to offering a counter to this proposed invasion of SAPMA members, SAPMA will also on behalf of the Retail Hardware and Paint Association, assist in:

- Training, professional recognition and general development of staff in this sector;
- Creating specific dispute resolution structures to help retailers avoid having to work through the Commission for Conciliation, Mediation and Arbitration (CCMA) in matters relating to employment, performance, discipline and dismissals;
- The facilitation of Section 189 staff retrenchment processes where necessary on members' request; and
- The dissemination of information relating to DTIC Supply-side Incentives for the hardware and paint retail sector.

"The new Retail Hardware and Paint Association, acting as both a trade and an employer association, will operate under the SAPMA umbrella as is currently the case of the Surface Coatings Association, which has been managed by SAPMA since 1985. A separate Governance Structure will be created for the new association which, once in place, will replace the existing SAPMA Retail Committee," Benn adds.

Hardworking tools for SA's toughest industry

AGRICULTURAL maintenance and repairs are challenging because farming equipment is constructed from materials specifically engineered to handle harsh working conditions.

PFERD manufactures and supplies a wide range of high performance tools to effectively, and economically, work the equipment and material used within the agriculture and related industries—offering users maximum benefit and cost-effectiveness.

Files – The tools that started it all

The Chainsharp CS-X is a 2-in-1 solution for the precise and uniform manual sharpening of chainsaws. It simultaneously sharpens the chain's saw teeth and adjusts the depth gauge—shortening downtime.

Drill Bits

STEEL drill bits are suitable for use on steel, cast steel, grey cast iron, annealed cast iron, bronze, brass, plastics and aluminium. While the INOX drills are suited to hard materials, such as alloyed and high strength steels and stainless steel.

VSM Actirox

Abrasive belts and fibre discs with exceptionally high stock removal rates significantly increase productivity. The precision triangular shaped ceramic grains reduce grinding time and ultimately reduces equipment downtime.

Diamond blades

Diamond cutting wheels offer excellent cutting performance and very long tool life, making them highly economical.

Cut-off and grinding wheels

PFERD offers a range of material-specific, high performance, cutting and grinding wheels to work steel, stainless steel, aluminium, cast iron and stone.

Cut-off wheels for stationary machines

Cut-off saws offer powerful and cost-effective cutting and PFERD has a range of cutting wheels for stationary applications to optimise the process. Our tools provide high cutting performance and long tool life making them economic tool solutions.

Wire brushes

Used to deburr, derust, descale, clean and even remove paint using a wire brush, PFERD has a wide range of high-quality wire brushes in different sizes, forms and filaments.

Tool drives

The range includes air-powered, electric and flexible shaft drives, recognised for their performance and durability.

On-site application assessments

A team of Application Specialists can assess an application and provide the optimum product and machine combination to ensure the ideal and most cost-effective solution.

For more information contact: Tel : +27 11 230 4000, E-mail : info@pferd.co.za/ sales@pferd.co.za or visit the website: www.pferd.com

New X-Cutter disc for very shallow soil tillage

AMAZONE has extended the range of disc options for the Catros compact disc harrow with the new X-Cutter disc.

This special, wavey profile disc is used for very shallow soil tillage. The special disc profile produces an intensive movement of the full-surface area with its high mixing intensity close to the surface that generates faster rotting. This provides optimum conditions for the following crop.

Very shallow tillage plays an increasingly important role when it comes to carefully managing the water balance in the soil. Shallow tillage significantly reduces the loss through evaporation of valuable soil moisture, particularly in hot and dry summers. Much less soil is moved than with other discs, which need to operate at much greater depths to move the full soil surface.

The demand to maintain field hygiene is also increasing. After harvest, the soil should be worked only very shallowly so that volunteer grains, volunteer rape and weed seeds are not buried deeply but are kept in the surface area by the very shallow cultivation. This means that these seeds have excellent germination conditions and these unwanted plants are then mechanically removed in the subsequent tillage operation, in order to obtain a clean start for the following crop.

The X-Cutter disc is available as an option for new orders or for retrofitting to various models from the Catros+ and CatrosXL compact disc harrow range.

The X-Cutter disc also does a great job in tall catch crops thanks to its full-surface cut. Optimum shredding at a shallow working depth in conjunction with intense microbial activity in the top soil layer promotes faster rotting of the catch crop.

The new X-Cutter disc has a diameter of 480 mm for a high peripheral speed and performs optimally at working depths from 2 to 8 cm. Thanks to the special wavey profile, the discs maintain that full-surface cultivation across the entire working width, even at these very shallow working depths. The X-Cutter disc also scores with its low pulling power requirement. This new special profile disc is available as an option for new orders or for retrofitting to various models from the Catros+ and CatrosXL compact disc harrow range.

Furthermore, Amazone has another newcomer in the product range, the leading knife roller. The combination of Catros with the X-Cutter disc and the knife roller enables a multi-dimensional cutting action to take place, thereby increasing the longitudinal and lateral shredding intensity in stubbles, straw and catch crops. The decomposition process is therefore yet further enhanced and the transmission of disease to the following crop reduced.

Agriculture light in unemployment darkness

THE latest Statistics SA Quarterly Labour Force Survey (QLFS) indicates that the number of employed persons decreased by 54 000 in the second quarter of 2021 to 14,9 million. The number of unemployed persons increased by 584 000 to 7,8 million, compared to the first quarter of 2021.

These changes resulted in the official unemployment rate increasing from 32,6% in the first quarter of 2021 to 34,4% in the second quarter of 2021 - the highest since the start of the QLFS in 2008. The unemployment rate, according to the expanded definition of unemployment, increased by 1,2 percentage points to 44,4% in quarter 2:2021 compared to quarter 1:2021. South Africa's unemployment rate has been recorded as the highest compared to their African counterparts such as Namibia and Nigeria.

The agricultural sector observed employment gains of 69 000 with provinces such as the Western Cape, Free State, KwaZulu-Natal, North West and Limpopo recording an increase in employment. A decrease has been noted in the Eastern Cape by 19 000, the Northern Cape by 9 000, Gauteng by 8 000 and Mpumalanga by 18 000.

Most concerning is the sector continuing to see a decrease in skilled agriculture as it records a loss in employment from 62 000 in Q1:2021 to 45 000 in Q2:2021. This is a 27,4% quarter to quarter decrease and a 33,2% year on year decrease.

"The increase of employment in the agricultural sector is showing the sector's commitment to job creation, food security and growth of the economy despite many challenges," says Lebogang Sethusha, IR administrator of Agri SA. "The organisation, however, is concerned about the quarter-to-quarter decrease of skilled workers, indicating the loss of skills within its workforce. This places a great emphasis on accelerating efforts in skills development in the sector."

Initiatives are seen through Agri SA's subsidiary, Agri SA Enterprises, which has established the Agri Enterprises Training and Development Academy with the sole purpose of providing industry-specific training in scarce skills within the sector. "We can develop a community of lifelong learners, responsible citizens and champions of industries," Sethusha says.

Mobile racking in South African fruit stores

SOUTHERN Storage Solutions – DEXION, has installed numerous mobile rack installations in conjunction with Barpro Storage which has increased the storage capacity of each facility without the expensive task of increasing the room size to cater for conventional pallet racking or drive in racking with all the associated extra refrigeration and electrical costs.

Traditionally pallets of packed fruit were stored by securing steel corner posts to each pallet and then storing another level of pallets on top. While doubling store capacity, this form of block storage effectively prevented stock rotation, increased stock damage and in some situations prevented adequate cooling. As fruit packaging became further differentiated, accessing stock quickly for an order became practically impossible.

Pallet racking was introduced into existing fruit stores to solve these problems. "Drive-In" racking made better theoretical use of the chilled space and reduced product damage. However the accessibility problem was not solved leading to "drive-in" lanes being only partially utilised for immediate access to individual product lines. The alternative was to use fixed selective racking, giving immediate access to every pallet but greatly reducing storage capacity.

Mobile racking was first used in 1997 in a fruit store outside Grabouw in the Western Cape. Designed to take a combination of 2 200mm and 2 400mm pallets with a maximum weight of 1 000kg, the pallets were stored with the 1 000mm side facing and the 1 200mm side in the depth of the racks.

What is mobile racking?

Mobile racking consists of special rails that are laid in the floor during construction.

Rails can also be retrofitted in existing rooms provided the floor is suitable by levelling the rails on the existing surface and pouring a 150mm reinforced slab. A low ramp is needed at the entrance. The mobile bases run on the rails and support pallet racking which is specially designed for use in a mobile application. The bases are motorised and energy efficient. Maximum tonnage per base varies but should not exceed 360 tons. In larger stores mobiles are arranged in banks of up to 10 bases, each with its own moving aisle. The bases are controlled either by push buttons, remote control, or by an interface with the warehouse management system. An access aisle is created at the push of a button.

Safety measures include photoelectric beams down the length of each base and across the front of each mobile bank with additional emergency stops. To move one or multiple bases takes approximately one minute twenty seconds. Mobiles are designed to give lighting signals so that the lights come on only in open aisles. This results in energy savings as each light produces heat which must be removed by the refrigeration system.

The possibility of pallets breaking was removed by using a pallet support or saddle beams in the middle of each pallet slot. These were painted yellow to assist with pallet placement especially on higher levels and increase rack strength. Another challenge arose when packed fruit stores remained in use for extended periods. Improved ventilation in the mobiles allowed packed fruit to be chilled and store temperatures were reduced to around 0 degrees C. Frost heave, caused by moisture freezing under the floor, is not good for mobiles and recent installations have under floor insulation and heater mats to make sure this doesn't happen.

The advantages of using mobiles in fruit stores have become apparent over the years. More expensive than "fixed selective" or "drive in", mobiles can increase the practical capacity of a store by up to 75 or 80% while still giving immediate access to every pallet. If the total cost of a proposed fruit store is divided by the practical pallet capacity the mobile option can be surprisingly competitive.

Recently, mobiles have been installed in smaller stores, 3 and 2 pallets in the height with capacities of less than 450 pallets. Moving aisles have been widened to allow for the use of counterbalanced trucks and pallet bays extended allowing the placement of 3 pallets on the longer 1 200mm side. Maximum pallet weights have increased to in excess of 1 300kg and storing five pallets in the height is now quite possible.

Barpro Storage are able to manufacture smaller systems locally in their Cape Town manufacturing facility which cuts costs and reduces lead times. The racking superstructure supplied by Southern Storage – Dexion is manufactured locally in Gauteng.

For more information contact Ron Bonthuys – ron@dexioncape.co.za or 021 552 0220.

Technology benefits farming operations

By Hentie Breedt, Marketing and Communications Manager, John Deere Africa Middle East

HAVING a successful farming operation in South Africa means setting long-term goals that foster resilience.

Resorting to short-term solutions may seem like the best decision today, but a farming operation will be ill-equipped to handle the challenges of tomorrow.

Technology is the underpinning factor that will provide your farming operations with the resilience it needs for a sustainable future. The decision to use technology applies to all aspects of a farming operation, especially when deciding on the correct mechanisation equipment to purchase for your farm.

Relying on equipment alone to ensure a successful operation, may overlook the opportunities that come with technological innovation.

To ensure the prosperity of the farm, the approach needs to be less equipment-orientated and more solution-driven.

Gone are the days when a tractor was just a tractor, or a harvester was just a harvester; your equipment has now become the means to a long-term, sustainable goal.

Solutions-driven technology can be applied to every level of mechanisation; for example, by using an efficient planter that optimises seed and fertiliser placement, yield percentages can be drastically increased.

As a farm increases in size and capacity, efficient data collection and management becomes essential. By introducing technology, data can be handled seamlessly. Data can be tracked and converted into appropriate and workable inputs for each step of the farming and cultivation process. Effective data management provides farmers with the insights they need to prepare for fluctuations in demand.

Whether it is soil preparation, planting, spraying or harvesting, technology will reduce fuel consumption while maximising profitability.

A sustainable, resilient farming operation is possible with the latest technology provided by John Deere that collects essential data and is processed by the John Deere Operations Center and JDLink™, farming operations can be at the peak of efficiency.

Technology is available to farmers at all levels and these innovations range from bolstered propulsion systems to driver comfort optimisations. With greater visibility and better lighting, you can keep your tractor going for longer.

Decision-making around future investments is crucial to ensure long-term success. One aspect of this is the resale value of equipment when it is no longer needed or needs to be replaced. Ensuring investment in equipment that, although it has a higher initial purchase price, often results in savings over its lifetime due to the latest technology. An almost assured high resale value offers an excellent long-term investment on the road to farming success.

The sustainability and success of any business is only as strong as its ongoing support structure, even more so in the farming environment. John Deere has one of the best dealer support networks in the world and by communicating service alerts in advance, directly from equipment to a John Deere dealer, ensures minimum downtime of machinery and tools, especially during critical times.

Which laser coder best suits beverage packaging?

APPLYING best-before dates in the drinks industry makes applying best-before dates a challenge. This is because while some technologies can print at high speed, the codes are not permanent and may lead to counterfeiting and non-compliance. One technology that beverage producers are increasingly turning to is laser technology.

Laser coders work by changing the surface of the packaging material, either by ablation, etching or foaming. This makes laser marks indelible – no rubbing, smudging, fading or faking. By not using inks, you also eliminate the cost of consumables and significantly reduce operating expenses.

What to consider

Items that are effectively marked by lasers include glass, PET bottles, cans, labels, cases, and pouches. The material you're marking will be your first consideration, followed by the coder's wattage, which is determined by line speed, substrate, and code size. Another consideration is the environment in which the equipment operates – typically humid, sugar-infused for beverage production.

CO_2 laser technology

A variety of wavelengths and lenses are available from CO_2 lasers, and these can be tailored for specific applications.

The SmartLase C350S 30W CO_2 laser coder from Markem-Imaje, locally available from Pyrotec PackMark, is designed for high-speed PET beverage production and provides crisp codes, even in wet environments. SmartLase C150S is the 10W CO_2 option for medium-speed lines.

For intermittent and continuous lines, the SmartLase C350 30W CO_2 laser coder addresses diverse medium- and high-speed applications requiring complex codes. For low speeds, the SmartLase C150 10W version is a lower-cost solution.

For more information on laser coding in beverage applications, visit: www.pyrotec.co.za

Shoprite launches world-class butchery learning programme

THE Shoprite Group has launched an internationally-endorsed Master Meat Artisan Programme for its qualifying butchery managers, and will train its initial intake of 52 people to join the exclusive global club of Master Butchers.

As there are only 55 Master Butchers in the world, this programme will boost the development of a particularly scarce and sought-after skill, provide career path opportunities for its employees and put the Group, and South Africa, on the map as world-class specialists in meat processing practices from farm to fork.

Of the only 55 Institute of Meat accredited Master Butchers globally, five are South Africans, all of whom are employed by the Shoprite Group. Two received the accreditation from the United Kingdom's Institute of Meat in 2019 and a further three were certified in 2020.

The Group already trains some 200 people a year in butchery skills to ensure an adequate supply of talent into its stores' Meat Markets across the country. The new programme, endorsed by the United Kingdom's Institute of Meat, will ensure its butcheries continue to enhance the Group's competitive advantage in this area.

The Master Meat Artisan Programme takes a year to complete, and participants are required to build a portfolio of evidence that includes modules on butchery expertise, business acumen and food hygiene and safety amongst others. It is anticipated that 250 of the Group's qualifying butchery managers will be enrolled onto this programme over the next five years.

The fact that the programme requires 10 years' experience, with at least five as a Meat Market manager, to qualify, reflects Shoprite's commitment to being on a long-term career journey with its employees by providing them with opportunities to develop their skills, increase their knowledge of meat and ultimately grow their careers.

The Shoprite Group is arguably the only company on the continent to provide this type of programme, and as Africa's largest food retailer, it is committed to developing and enhancing the skills of its employees. This is one of numerous programmes its employees have access to.

The first intake of 52 commenced in August 2021, and all training is undertaken by the Group. The UK's Institute of Meat will be involved in the quality assurance of the learning programme and learners' achievements.

Don't automate for automation's sake

By Aimee Clarke, CBN

IT's been more than 200 years since the steam engine changed the trajectory of humanity and industry. It's been just as long since people started worrying that technology would render them redundant. The steam engine was used to minimise the need for human labour in manufacturing while ramping up production. Sounds familiar?

In 2021, we are facing the same fears (and opportunities) as in the 1800s.

In an exclusive interview with CBN, Marc Van Pelt – MD of Pepperl+Fuchs Africa and chair of the South African-German Chamber of Commerce and Industry's Working Group 4IR – said: "The manufacturing industry is presented with ever-improving technology with which to boost production, minimise downtime and drive profitability. At the same time, there are delicate socio-economic concerns which must be navigated." This is especially true for South Africa, where industrial innovation poses a threat to our ability to meet some objectives identified in the National Development Plan (NDP) 2030 and UN Sustainable Development Goals (SDGs), such as:

- SDG 8: The promotion of sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
- SDG 9: Inclusive and sustainable industrialisation.
- SDG 10: Reduction of inequality within and among countries.

However, while South Africa is looking for ways to meet our development goals, the manufacturing sector is shrinking. The sector's share of the country's gross domestic product decreased from 19.3% in 1994 to 12% in 2018. However, according to van Pelt, there are still opportunities abound.

"I believe South Africa is a prime destination for manufacturing. Our automotive manufacturing plants are a perfect example of this. We are globally competitive and can remain so if we keep with pace of change of technology. However, we must be very careful that we do not automate that which does not *need* to be automated. We must translate innovation into the African context, do business the African way, and take note of how we implement new technology into our manufacturing plants."

A recent study on the South African manufacturing industry identified the challenges in local adoption of 4IR (fourth industrial revolution) technologies. The data points to social inequalities, resistance to technology, and lacking skills/education as primary concerns. In identifying strategies to improve innovation in South Africa, the study argued for adoption which takes into account the specific national context, aligned to the objectives of the NDP and the SDGs.

What does this look like in practice?

It looks like a people-focused approach. It means taking the time to ensure our graduates are prepared to embrace innovation, with the right educational foundation and adequate 4IR skills. This requires private sector involvement, as SA faces ongoing struggles with a constrained public education system. "We have engaged with universities on this, and encourage other companies in our sector to do the same. By focusing efforts on our young graduates, we can better prepare them for work and foster a mindset which is innovation-positive. We must all contribute to creating the workforce we need," says Van Pelt.

"Automation is not about reducing labour costs. It's about improving our production quality to an output which is internationally competitive. We have the potential to be a manufacturing hot-spot, and we need people – aligned with technology – in order to achieve this," he concludes.

The importance of lube oil system filtration and monitoring

THE viscosity of oil in a lube system and its impact on system bearings if not filtered appropriately can adversely impact on system performance and have catastrophic consequences and system non-performance. SKF states; "as long as particles larger than the lubricant film are removed, bearings can have an infinite life". Lubricants must be checked for contamination when the lube oil is delivered at the plant. Whether it is offline filtration or online filtration engineers should ensure the lube oil is clean and meets the system specifications.

Chris Banks of Hydrasales advocates contamination control measures and strongly recommends that system designers and system constructors incorporate simple, cost effective equipment in their system design for cleanliness in lubrication systems.

He cites the inclusion of the following types of equipment for reducing contamination within a hard-working system. These applications normally run 24/7 and the engineer cannot afford a breakdown or disruption in the working cycle.

A medium pressure inline filter range

A wide range of inline filtration caters for flows from 200 l/min to 3 000 l/min and pressures from 20 bar – 80 bar.

Banks says; "Hydrasales has full access to MP Filtri's filter sizing software allowing our customer peace of mind that the correct filter is identified for the application and can meet the design requirements."

The LMP range of durable in-line filters have a wide range of element media options, including water removal. Banks advises; "It is ideal for high flow charge pump supply, a return line or an off-line filtration circuit. The duplex filter range known as the LMD range is designed to allow element change-out in continuous duty machine operations. This makes maintenance more efficient, eliminating downtime when filter element requires replacement or cleaning.

A water removal element is available with 25 micron Absolute Filtration".

Multiport in-line filters.

Checking levels ensures lubrication is being delivered

It can be challenging to ensure that the lubricant reliably reaches the lube point.

Hydrasales supplies the Badger meter product range including Headland variable flow meters available with a microswitch to allow for low flow alarm. An alternative could be visual or electrical oil level gauges to suit the requisite application.

Pump protection

MP Filtri's Elixir range of filters includes the SFEX, Inline Suction Filter including wire mesh filter cartridge for the bowl and housing. This design allows for a mesh element to be easily removed, inspected and cleaned. The more common spin on oil filters cannot be cleaned and need to be replaced. This is not economical compared to a fully reusable cartridge element.

Commonly found suction strainers are generally situated at the bottom of the reservoir and are not easily accessible especially with a full reservoir. The Elixir range is designed to accommodate higher flows, with improved connection system reducing leakage and reducing dirt to the output circuit. The range can accommodate differential clogging indicators and pressures of 16 bar.

Reservoir desiccant breathers for moisture extraction

Studies have shown that around seventy percent of equipment loss efficiency is due to surface degradation. The need for replacement is the direct result of corrosion and mechanical wear accounts for the balance. The most common causes of this corrosion and mechanical wear are dirt and moisture originating outside the machine. Moisture ingress leads to corrosion, which in turn leads to particulate contamination. Moisture can also affect the required oil viscosity, deplete additives and result in sludge formation.

Contact Hydrasales at harpo@hydrasale.co.za for filter sizing, free support on lube system filtration and contamination.

Tackling the Hennops River crisis, one refuse bag at a time

By Aimee Clarke, CBN

IF you've ever been hiking along the Hennops River trail situated between Johannesburg and Pretoria, you've likely had your picturesque outdoor adventure somewhat ruined by riverbanks littered with plastic bags, bottles and food packaging – never mind the smell! This was how I first experienced the Hennops River back in 2017. Since then, the trail has exploded in popularity as thousands of bored Gauteng residents – overcome with the "lockdown blues" last year – realised that hiking was a social interaction they could get away with under the Covid-19 restrictions.

These flocking lockdown hikers are probably unaware of the immense amount of hard work and dedication which has gone into restoring the Hennops River, creating a pleasant experience for those who spend time around it – a vastly different experience today than my first time there.

There is one courageous and inspirational woman behind it all. What started as one river clean-up day at the request of her daughter has turned Tarryn Johnston's environmental mission into a globally recognised initiative. "I know that what I have taken on is a mammoth task – the Hennops River is one of the most polluted rivers in our country. The water in the river is a reflection of a very broken system and I know this is not going to be fixed overnight."

Hennops Revival began in 2019 as a river clean-up event that was shared far and wide through social media. It has gained traction to a point where Johnston has formalised the operation into a Public Benefit Organisation which offers tax exemptions to those to contribute. "We have had thousands of volunteers, but there are many more people who want to sponsor others to clean the river regularly. We are now able to pay unemployed locals who live on the riverbanks, and get them involved with cleaning and conservation efforts," says Johnston.

However, in an exclusive interview with CBN she said that picking up litter is like placing a band-aid on a gaping wound. "There are many people who don't understand how their actions have consequences for the environment. As we speak, I am on my way to see our first litter trap being installed upstream, as part of a multi-phase catchment system.

Beyond that, we want to close the 'water gap' with educational initiatives in the communities around the river." Johnston aims to angle the Hennops Revival initiative to uplift the community, help alleviate poverty, promote access to clean drinking water, and build an ecosystem with an emphasis on Ubuntu and urban subsistence farming. "The river offers many opportunities – it just requires collaboration, and Hennops Revival provides the perfect platform."

How did this small initiative grow with such success? "I am action-driven, and I take every moment to promote awareness of our cause. I have built strong relationships, I have used my voice. But ultimately, I have made a deep commitment to myself. Even if it means doing it alone, I will get up, show up, and be consistent."

Thankfully, she doesn't have to do it alone thanks to the support of individuals and companies who have invested their resources behind this incredible cause.

Learn more about this initiative and how you can get involved by visiting www.hennopsrevival.co.za

Tarryn Johnston – almost up to her neck in it!

SABIA – promoting biogas as an vital part of SA's future energy mix

Typical biogas production plant.

THE South Africa biogas sector is represented by SABIA, a Non-Profit Organization, that leads the industry discussions with relevant governmental departments and institutions, international organisations, NGO's and other industry associations to promote the sector, lobby for relevant legislative change, policy development and assisting members in gaining exposure. SABIA currently represents more than 50 members and actively keeps our members up to date on the industry through webinars and monthly newsletters, which is also shared with more than 1,500 stakeholders.

SABIA has adopted a global strategy for the development of a local biogas industry and is working with the South African Government to:

1. Include the production of biogas as a climate change mitigator in all levels of government including national, provincial, municipal and individual cities' energy plans
2. Include targets for the recycling of biodegradable wastes and feedstocks to produce biogas in Nationally Determined Contributions to the UNFCCC by 2020
3. Build a Circular Economy in which organic wastes, residues and feedstocks are recycled into renewable biogas and valuable organic nutrients for use in the agricultural sector
4. Adapt the flow of financial support to the biogas sector, which is not only an enabler of a low- carbon based economy, but is also the quickest and most cost-efficient CO2 reduction pathway.
5. Use the fuel produced by biogas production facilities for power generation, publicly owned transport and waste collection trucks. Carbon neutral fuel for electricity generation and for transport, contribute to improved air quality in cities worldwide using biogas as a clean fuel.

The SABIA strategic vision has developed a set of guidelines/roadmap for Government and policy makers that focus on:

- Diversion of organics/food waste from entering a landfill site through the introduction of separate organic waste collection for treatment in biogas facilities across South Africa.
- Setting of targets and implementation strategies for the recycling of biodegradable wastes and feedstocks
- Development, support and creation of the SABIA Biogas PES tariff (Payment for Ecosystem Services or Payment for Environmental Services) to stimulate the recovery of organic residues
- Production of biogas through the installation of biogas technologies at a. agri-industry processing facilities, b. urban wastewater treatment plants c. livestock farms
- Adoption and implementation of the Organic Waste Norms and Standards developed by SABIA and partners in 2016
- Drive the creation of an enabling market environment for the capture and utilisation of landfill gas at both private and public landfills
- Ensure all municipalities and Eskom to buy-back surplus electricity generated from biogas plants at published Megaflex rates from IPPs (Independent Power Producers)
- Incentivise the energy generation and use from livestock manure via targeted policies such as specific rural schemes for micro-scale digestion that result in energy security and independence, reduced use of solid fuels for domestic cooking and heating, and reduced deforestation whilst improving agricultural security through the recycling of nutrient and water
- Development of standards and certifications for safe trading and application of digestate

SABIA in the last five years has worked very closely with public institutions and achieved very important results like the implementing a standard for the re-use of the organic waste, that need to be adopted, the development of Norms and Standards for biogas projects, the exclusion of biogas plants from air emissions license requirements. SABIA's next goal is to unlock the full potential of the South Africa biogas market through the approval and adoption by the Department of Environment, Forestry and Fisheries ("DEFF") of the SABIA Biogas PES tariff (Payment for Ecosystem Services or Payment for Environmental Services) to stimulate the recovery and beneficial utilisation of organic residues.

Mobilising schools to improve recycling of packaging

Packa-Ching, an innovative community recycling collection initiative is on a mission to improve South Africa's recycling rate by mobilising schools and their learners. Started by Polyolefin Responsibility Organisation NPC (Polyco) in 2017, Packa-Ching mobile units are now operating in six areas across South Africa. Residents have so far been paid out over R2.5million for the 3 million kilogrammes of used recyclable packaging that they have bought to Packa-Ching. Building on this success, Packa-Ching aims to launch the Packa-Ching schools programme to educate learners about the value of recycling, but needs sponsors to do so.

"SCHOOLS are the hearts of communities. The focus of the Packa-Ching schools programme is to educate learners about the importance of recycling in keeping our environment clean and to teach them that used packaging has value," says Nicola Rowe, Brand Manager at Polyco. "By influencing a positive behaviour towards recycling at schools, we hope that learners take this lesson home and influence their family and community members to recycle their waste and earn money for it."

To date, Packa-Ching has been rolled out in six different regions across South Africa. The success of the project has resulted in more than 3 million kilograms of recyclable packaging waste having been collected and therefore diverted from landfill and kept out of the environment, and more than R2.5 million paid out to members of the public in exchange for their recyclables.

The Packa-Ching schools programme will educate learners about the importance of recycling, install recycling infrastructure into schools, and pay the schools for the recyclable material that the local Packa-Ching enterprise collects. Learners will celebrate each year's achievements at an annual prize giving that recognises champion learners and teachers for their recycling efforts. The Packa-Ching schools initiative was previously piloted in two schools and in just one month, more than 3 200 kg of recyclable waste was collected and more than R3 600 paid to the two schools for this recyclable material. "The biggest win of our schools pilot project was the commitment of learners, showing a clear excitement and motivation to recycle their waste," says Rowe. "This is exactly what we need to improve South Africa's recycling rate; young advocates for positive change."

To reach the full potential of the Packa-Ching schools programme, Polyco is calling on brands to sponsor the programme. This sponsorship will influence South Africa's behaviour towards waste and encourage more households to recycle.

"Accumulated waste, especially in underprivileged communities, continues to be a big social and environmental problem. It adversely affects the quality of life within communities," says Megan Swart, Packa-Ching's Operations Manager. "With Packa-Ching our goal is for residents to see waste not as 'litter', but rather as money, offering a dignified opportunity to earn an extra income and keep their community clean as a result. We are thrilled with our success to date and we look forward to rolling out the Packa-Ching schools programme to educate and inspire South Africa's youth."

Unpacking the latest addition to the growing list of government plans: The NIP 2050 places a tall order for the construction sector

By Aimee Clarke, CBN

IN August, the National Infrastructure Plan 2050 (NIP 2050) was gazetted for public comment after six months of preparation by Infrastructure South Africa (ISA). The plan positions infrastructure development as a "non-negotiable foundation of transformation and inclusive growth". Indeed, an increase in public infrastructure projects would see an influx of opportunities for the building and construction sector and the wider value chain, with positive economic knock-on effects.

However, this is scarcely the first time government has laid out ambitious plans to boost infrastructure development. Remember the 50 "special infrastructure projects" which made headlines last year? Where are they now? It has been more than a year since these projects were gazetted and it seems South Africa is no closer to our "infrastructure-led economic recovery".

It is widely understood that state capacity is a hindrance to the execution of the country's National Development Plan 2030. Simply put, the government is in their own way the hindrance – and they have acknowledged this. As such, the NIP 2050 aims to address "institutional blockages and weaknesses that hinder success over the longer term, and guides the way to building stronger institutions that can deliver on the National Development Plan (NDP 2030)."

Without wanting to sound too facetious, it would appear that we are now confronted with a plan (the NIP) in support of a plan (the NDP). How will these plans be achieved? With another plan, of course! The National Implementation Framework towards the Professionalisation of the Public Service was gazetted in December 2020 and aims to "ensure a responsive, meritocratic and professionalised public administration in the service of the people". Headed by the National School of Government, the successful implementation of this framework would see much-improved state capacity and hopefully an unlocking of the infrastructure project pipeline – and improved action on the NDP 2030 and NIP 2050.

We hold out hope. In the meantime, the building and construction sector should start preparing to meet the requirements of upcoming public infrastructure projects – and the state has a tall order!

The NIP 2050 calls for a "world-class" civil construction and supplier sector and recommends that "an explicit effort be made to enable South Africa's construction and supplier industries to deliver on the national development objectives". The NIP

envisions a sector that is "cost-effective, and offers safe and reliable service with an experienced and skilled workforce and world-class products relevant to the development context."

Translated, this means that the construction industry better be ready to offer their services to the government at the best price, highest competency, and unbeatable quality. There is sure to be massive competition for contracts as the government looks to the private sector to deliver on the NDP. When – or if – infrastructure projects start rolling, only the best in the businesses will be considered.

If you would like to make comment on the NIP 2050, your submission should reach the DPW&I on or before 17 September 2021. Submission should be addressed to the Chief Director: Infrastructure by:

- ***Delivering by hand to DPWI, 256 Madiba Street, Pretoria Central, Pretoria***
- ***E-mailing NIP2050Inputs@dpw.gov.za***

Lilac pack raises women awareness

IN recognition of Women's Month in August and to raise awareness of gender-based violence, Den Braven Sealants South Africa has launched a different colour packaging for its bestselling Acryl-W Sealant. It is also in support of Breast Cancer Awareness month in October. This product is used extensively by men and the hope is that this new lilac pack will raise awareness around these three areas of concern for women.

Women's Month is commemorated every year in tribute to the more than 20 000 women who marched to the Union Buildings on 9 August 1956. This historic march was a turning point in the role of women in their struggle for freedom.

Women and girls are faced with another struggle today, that of gender-based violence. The Covid-19 pandemic has exacerbated the already unacceptably high levels of gender-based violence and femicide, and South Africa holds the shameful distinction of being one of the most unsafe places in the world to be a woman. Den Braven promotes equality in the work place and encourages its staff to understand their constitutional rights and to bring about social change in their communities.

Breast cancer is one of the most common cancers in South Africa. Den Braven Sealants supports The PinkDrive, an organisation supported by donations and committed to raising awareness and early detection of breast cancer.

Colene Baker, managing director of Den Braven Sealants, salutes the many highly regarded women who have broken the mould of a traditionally male dominated industry in the built environment. Women from all walks of life are also taking the initiative in handling their own home renovations and DIY projects. Colene is passionate about sharing the often confusing knowledge on the correct use of sealants and adhesives to both professionals and the casual DIYer. Den Braven's FaceBook site showcases its 'How To' videos, educating both men and women on tackling a sealing job and sharing tips of the trade, and also has a

Celebrating Women - Den Braven head office ladies launch the new Acryl-W lilac packaging.

quick guide on what to use where.

Keep an eye open for the limited edition of Lilac Acryl-W, available from hardware stores and Den Braven's regional offices in Cape Town, Durban and Johannesburg.

For more information visit: www.denbraven.com/en-sa. sales@denbraven.co.za or tel: 011 792 3830

Appointment

GVK-Siya Zama Building Contractors recently acquired the expertise of Lance Cohen as Group Production Director.

His experience spans 22 years with WBHO with highlights including the 2010 World Cup construction projects, followed by a spell of property development with Investec Property.

Cohen's role at GVK-Siya Zama is to take care of the production side of the business at group level.

He says, "What's important for me is maintaining solid, authentic relationships with clients and suppliers, and making sure that we deliver on our projects."

Quality cement paves way brighter economic future

BY ensuring that a high quality of cement is used in infrastructure projects, South Africa is investing for a stronger future, according to Richard Tomes, sales and marketing executive at construction materials leader AfriSam.

"With our history going back 87 years, AfriSam has sustained a significant focus on quality which today pays dividends in terms of the structures relied upon by our people and our economy," says Tomes. "By putting the best quality materials, expertise and technology into our products, we pave the way to a brighter and more reliable future."

The drive for quality is closely linked to being fit-for-purpose, he says, by ensuring that a range of cements is available for defined applications. In the housing sector, AfriSam has raised the bar with the quality of its All Purpose Cement so that it can be used for a number of purposes within this segment.

"Contractors and home owners want to rely on a cement that will last, so that problems like cracks in walls do not occur," he says. "At the same time, there may not be a high level of expertise among some users in this market, exposing them to a potential risk if they choose the wrong cement for the task."

Mixing concrete with a cement that has been developed only for plastering, for instance, could compromise the integrity of the structure. To avoid this risk altogether, AfriSam's All Purpose Cement meets a high spec that allows it to be used for any home-building application.

"Road building is another application where quality cement brings many benefits that end-users seldom even see or think about," he says. "AfriSam's Roadstab is a specialised cement that allows contractors to create a strong foundation for longer road life, while also giving them delayed setting time to conduct the necessary mixing and compaction."

By the same token, large structures need a cement which will reduce the heat differential between the inside and outside of a large concrete mass so that cracking does not occur. Special cements to achieve this have allowed South Africans to build vital structures like dams and wind farms, vital to our economic development.

"As we start to experience the global challenges of climate change, it is not enough to focus just on the quality of cement products themselves," says Tomes. "We need to innovate the process of how we manufacture these products, for a more sustainable future."

He highlights that AfriSam's commitment to both people and the planet have ensured that quality processes have reduced the company's carbon emissions to well below the international average for cement producers. It has even contributed to water savings by developing cements that consume less water when mixed to produce concrete.

Kathu depot provides off-the-shelf lighting service

RAND-Air, part of the Atlas Copco Specialty Rental division, providers of air, nitrogen, power, flow (pumps), steam boiler and lighting solutions, were recently able to provide an off the shelf lighting solution to a customer from its Kathu depot in the Northern Cape.

The unit, a 6.5 kVA QLB 60 lighting tower is energy efficient and provides exceptional luminous coverage.

Complementing the efficiency of this one-month hire are the QLB's features including sealed-off components for optimal operation in the dusty conditions of the Northern Cape, fuel efficiency (using only 0.5l/hour), lower exhaust emissions, a spillage-free frame with internal filling inlet and easy, clean drainage of all liquids; as well as ease of use with a manual and automatic switch and remote start functionality.

The tower is fully roadworthy, allowing for easy transport to and around the operations site.

Rand Air provide 24/7 technical assistance for the duration of the hire and carry a comprehensive stock inventory at the depot should spares be required.

Point and shoot laser distance meter

COMTEST is offering Fluke 417D, an accurate, durable, point and shoot laser distance meter, designed for indoor and outdoor, dusty and wet conditions. The easy, one-button operation means users can minimize time taken by measuring, while the Fluke brand assures the quality and reliability of measurements taken. And, with simple function buttons, three different measurement tasks can be completed quickly and easily. The extra bright laser is clearly visible, so the target point can always be seen, even if the target object is in a hard-to-reach spot, or at a long distance. The 417D has a large 2-line illuminated LCD screen and three-buttons for easy-to-use one-handed measurements.

Features and benefits:

- Measures up to 40 m (accuracy of 2 mm)
- 1 button instant distance measurement
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For more information contact COMTEST on 010 595 1821 or sales@comtest.co.za

Non awarding of tenders could ultimately result in legal action by the industry

Says Deon van Zyl Chairperson WCPDF (Western Cape Property Developers Forum)

AS infrastructure falls apart, the economic havoc being wrecked due to the continued non-awarding of tenders across all spheres of government continues unabated. And, indeed, the public at large - desperate for service delivery - seems to be unaware of the genesis of the lack of such delivery: in other words, the public sector procurement bottleneck that now impacts on the whole of our society.

Of great concern is the fact that the media has not yet latched on to the inability of all spheres of government to procure fixed capital projects and related professional services in a transparent and efficient manner.

Also at fault is the construction and consulting disciplines who dare not raise their proverbial heads above the parapet to ask: "But, really, WHY?" when tenders are cancelled, due to the very real fear of being black-listed or side-lined by those same departments issuing the tenders. Being informally black-listed is a thing; it happens. And these days, it's a topic that takes up 50% of our monthly WCPDF management committee meetings as we seek ways in which to alleviate the highly problematic and costly situation for those of our members still brave enough to even attempt to tender.

In last month's newsletter, we noted the City of Cape Town had cancelled a tender to do with the design and construction of IRT facilities, the only explanation for the cancellation being that it was "…in accordance with clause 13(1)© of the Preferential Procurement Regulations, 2017". What on earth is that meant to mean? And how on earth do we gleam any useful knowledge from a message like that when resubmitting new tenders? Patently, compliance supersedes service delivery.

This past month, we again received notification that the Western Cape Government had cancelled Tender S061/19 in respect of the much-anticipated new Klipfontein Hospital in Manenberg, the only explanation given being that this was "…due to concerns were [sic] raised by National Treasury."

And let's not forget the District Six professional services tender cancelled earlier this year by National Government's Department of Rural Development and Land Reform. In that instance, the only explanation given to the 37 consortia from across the country, which had spent millions on the compilations of their tender submissions, was that not a single one of the submissions "complied" with the "two envelope" submission process – a factor which many of our own WCPDF members who submitted tenders strongly refute, having themselves followed the application process to the letter.

The WCPDF has already gone so far as to seek legal counsel on the matter of cancelled tenders, with investigations into possible PAIA and PAJA applications and even class-action law suits being laid against officials whose departments continually cancel tenders. The jury is still out on the best course of action to take, but take action of some nature we must, particularly as infrastructure countrywide continues to disintegrate thanks to this ongoing government paralysis.

Indeed, in a time of "audit compliance" when government across all spheres claims to being committed to rooting out "fruitless and wasteful expenditure" in its own ranks, it needs to interrogate why it is demanding the private sector to engage in the same "fruitless and wasteful expenditure" in the endless and very costly compilation of tender submissions which it clearly has no real intention of awarding.

Will it take a boycott of all government tenders for government to take notice that its procurement system is not working?

LOVEMORE & CO are pleased to successfully complete the new service centre and offices for **Cash Crusaders** at Capricorn Park

- **The contract to construct the New Service Centre was concluded in mid-November 2020, valued at R18 million, with work commencing mid-January 2021.**
- **Works completion was achieved in 6 months.**
- **This Service Centre is part of the Cash Crusaders' expansion and modernization programme.**

MAITLAND, Cape Town, August. 24, 2021 – Lovemore & Co, a leading industrial and commercial construction contractor in the Cape Peninsula, today announced the completion of works for a New Service Centre and Offices for Cash Crusaders at their headquarters in Capricorn Park, Muizenberg.

The double story offices and service centre is the latest of many successful industrial projects completed by Lovemore & Co over the course of the past three decades. The project was completed in record time and will position Cash Crusaders for further expansion and modernization at their nationwide headquarters in Capricorn Park, Muizenberg.

The project commenced at an awkward time for Lovemore and Co as they were focussed on the successful completion of two other large developments valued in excess of R90m. Covid precautions added further complexity, as did the fact that Lovemore and Co was in the process of relocating their Head Office in order to acquire additional yard space to meet operational requirements.

Cash Crusaders co-founder, Brent Topat extended his congratulations to the Lovemore and Co team and highlighted the importance of the project to his expansion plans. "When it came to choosing a reliable and trustworthy construction company, there was no doubt, that Lovemore & Co were our partner of choice. They built our nationwide headquarters in 2005 to our full satisfaction and we're very pleased to have awarded them this expansion project".

The three Executive Directors of Lovemore and Co, thanked Cash Crusaders for the confidence they had shown in the company after awarding them the contract.

Stephen Pearce, Operations and Project Director said: "We are very pleased with the support and loyalty that Cash Crusaders have extended to us. We make it our mission to deliver on our promises and are proud of the speed and agility we have achieved in a challenging environment. Our workforce is dedicated to our clients, and have demonstrated our ability to leverage our infrastructure to manage several projects in parallel".

Colin Drescher, Commercial Director added, "The industry is in transformation as many companies adapt to the new normal, commodity and raw material prices are escalating rapidly which makes competitive pricing a challenge. We pride ourselves in being able to provide clients with fixed pricing and deliver the highest quality in the industry – short cuts are simply not in our vocabulary."

Brett Murray, Finance and IT Director explained, "In today's environment, and unlike many others who operate in the commercial and industrial segment, Lovemore & Co are fortunate to have a strong balance sheet. We derive great satisfaction from knowing that once we have completed a project that there is high likelihood of our clients selecting us for their next development".

The Directors of Lovemore and Co look forward to welcoming their many existing clients and stakeholders as well as new clients to their new premises in M5 Business Park.

ABOUT LOVEMORE & CO

Founded in 1990, Lovemore & Co specialize in SINGLE SOURCE DEVELOPMENT and CONSTRUCTION CONTRACTING in the Commercial, industrial and education sectors. Our management and staff are long serving and highly experienced in both general contracting and developments. We are committed to our clients and deliver on our promises. As a single-source contractor, we are actively involved in every aspect of every project. We find the fastest, most cost-effective way to deliver the highest quality results – we pride ourselves on our accountability.

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LOVEMORE
and company

The Future of Construction is Powered by **PERI**

PERI is one of the world's largest manufacturers and suppliers of formwork and scaffolding systems. With international solutions stemming from the company's German origin, the South African branch has been actively building South Africa's infrastructure and industries with the knowledge that they are participating in economic growth and providing sustainable support to the construction industry.

There is a real sense that the widely spoken about infrastructure projects, will start receiving funding from government soon. Among these, water storage could be at the forefront as communities find it harder to manage with current reservoir space. As experienced in the Wester Cape in the recent drought.

PERI has been involved in a number of projects pertaining to water storage. These projects showcase real examples of how PERI both addressed and overcame challenges through well-grounded engineering-based solutions.

The Polihali diversion tunnels in Lesotho formed part of the second phase of construction of the Lesotho Highlands Water Project (PHWP II). It builds on the successfully completed first phase of the project where Katse Dam was the main focus.

The project's main driver is to increase the current supply rate of 780 million m^3 per year to 1.27 billion m^3. Lesotho also makes use of the Highlands water scheme to generate hydropower. The 2.3 billion m^3 Polihali Dam forms part of three sites that have been identified as hydropower sites. Phase two will further add to their generating capacity as they have identified this as their preferred method of supplying their own independent source of electricity.

The construction industry is key to promoting economic recovery and growth in South Africa. By leveraging local and global skills, and supply chains, PERI recognises the importance of partnership and collaboration to deliver successful and sustainable projects that will uplift people, communities and the economy.

PERI Infrastructure strategy is developing positively, providing our customers with efficient, cost effective solutions.

Polihali Diversion Tunnels
Client: SCLC JV (Webuild, CMC di Ravenna, CMI Infrastructure & LSP Construction)
Location: Mapolaneng, Lesotho

Background:
The Lesotho Highlands Water Project Phase 2(PHWP II) builds on the already successfully completed Phase one projects of which Katse dam was the main focus. The projects main driver is to increase the current supply rate of 780 million m^3 a year to 1.27 billion m^3.

Lesotho also makes use of the Highlands water scheme to generate hydropower. Phase 2 will further add to their generating capacity as they have identified this as their preferred method of supplying their own independent source of electricity.

The 2.3 billion m^3 Polihali Dam forms part of 3 sites that has been identified as hydropower sites.

PERI Solution:
PERI provided a load bearing tunnel formwork carriage that catered for both the 7m and 9m diameter sections.

Through innovative design PERI was the only company that could offer 1 system to be used on both diameters. Peri came up with a concept to design and manufacture the circular walers for the larger diameter structure. Sections of these walers could then be removed and the balance of the walers re-assembled and packed to create the 7m diameter section The tunnel formwork was supported and moved on a purpose build VARIOKIT Traveler. Further to the design of the system PERI's on-site support team assisted in the assembly of the traveler and formwork as well as with the reconfiguration from 7m to 9m.

The client is currently achieving a 5 day pour cycle and both tunnels will be completed at the end of January 2021.

Email **info@peri.co.za** or visit **peri.co.za** for more on projects and products.

Deep sea mining may be step closer to reality

David Shukman BBC Science editor

THE tiny Pacific nation of Nauru has created shockwaves by demanding that the rules for deep sea mining are agreed in the next two years.

Environmental groups warn that this will lead to a destructive rush on the mineral-rich seabed "nodules" that are sought by the mining companies.

But United Nations officials overseeing deep sea mining say no venture underwater can start for years.

So what's causing concern?

It's all about a letter that refers to the small print of an international treaty which has far-reaching implications.

Nauru, an island state in the Pacific Ocean, has called on the International Seabed Authority - a UN body that oversees the ocean floor - to speed up the regulations that will govern deep sea mining.

It's activated a seemingly obscure sub-clause in the UN Convention on the Law of the Sea that allows countries to pull a 'two-year trigger' if they feel negotiations are going too slowly.

Nauru, which is partnered with a mining company, DeepGreen, argues that it has "a duty to the international community" to make this move to help achieve "regulatory certainty".

It says that it stands to lose most from climate change so it wants to encourage access to the small rocks known as nodules that lie on the sea bed.

That's because they're rich in cobalt and other valuable metals that could be useful for batteries and renewable energy systems in the transition away from fossil fuels.

Why could this matter?

If the ISA does not manage to settle the rules for mining within two years, it may issue Nauru with provisional approval to go ahead - and no one knows what that could mean.

"This could really open the floodgates," Matthew Gianni of the Deep Sea Conservation Coalition told me.

"If Nauru and DeepGreen get a provisional licence, any number of other companies or states could trigger the two-year rule too and then the whole process descends into utter chaos.

"Things have got a lot messier - it would not be a coordinated, well-planned process of negotiation to come up with regulations."

What does the International Seabed Authority say?

In an interview with the BBC, the authority's secretary-general Michael Lodge has played down the implications of Nauru's move, saying that there's still a long way to go before any mining can start.

He said the Council of the ISA had agreed back in 2017 to finalise the regulations for mining by 2020 - a plan that was derailed by Covid-19.

If Nauru and its partner DeepGreen are ready to apply for a mining licence in two years' time, there would then be a series of hurdles before approval could be given - including an environmental impact assessment and plans to minimise the damage.

"Even under the current draft regulations," Mr Lodge told me, "any application for exploitation is likely to be a lengthy process that has multiple checks and balances."

That would take at least two or three years at least so the earliest any actual mining would begin would be around 2026.

Where does this leave the deep ocean?

Scientists say they're far from gaining a complete understanding of the ecosystems in the abyssal plains - but already know they're far more vibrant and complex than previously thought.

The nodules, a habitat for countless forms of life, are estimated to have formed over several million years so any recovery from mining will be incredibly slow.

Also, what's still unknown is the effect of the plumes of sediment that will be stirred up by the giant machines and are likely to drift over vast distances underwater.

Researching this question is a difficult and slow task - and is unlikely to be fully answered within the two-year period initiated by Nauru.

So Andrew Friedman of The Pew Charitable Trusts, is among those fearful of "fast-tracking" the approvals process.

"The seabed is a vast, unexplored, biologically-rich environment, and the ISA must invest the time and resources needed to ensure deep-sea ecosystems are protected before any mining goes forward."

So what's next?

Jessica Battle of WWF says a moratorium is essential to have a proper evaluation of the risks.

"We really need to put a brake on all this, in particular until there's enough time for the science to help make an informed decision."

She's less worried about the prospects of actual mining starting in two years' time - given that mining machines still aren't ready - and more about what might happen in the rush to get the regulations finalised.

"What will prevail? The precautionary principle and care of the environment? Or business interests?"

The Patania II is one prototype of a deep sea mining machine. Image source GSR.

Pumping abrasive drill cuttings at higher concentrations of solids over liquids

THE EDDY Pump Excavator Dredge Pump Attachment is a state-of-the-art dredging system that claims to be unique to the market and improves the process for high solids pumping while using the hydraulic power of the existing excavator. This technology easily pins into the existing bucket linkage and is powered off of the excavators' auxiliary hydraulics. The pump and equipment are both built and designed by EDDY Pump Corporation, ensuring the perfect fit along with maintenance support. The technology can be used for hydraulic barge unloading, mining tailings ponds, slurry ponds, liner safe dredging, heavy construction, dewatering, railcar offload and other applications.

Using a cutter head or high-pressure water jetting rings (depending on the dredging application), the patented pump technology outperforms all centrifugal, vortex, and positive displacement pumps in a variety of the most difficult pumping applications. The pump and cutter head suction dredge work in conjunction to make this the optimal dredging system for handling compact material, highly viscous materials, and for pumping high solids. This pumping system can easily pump slurries up to 1 300m without the need for a booster pump. For large rocks and distances of more than 600m, an HPU (Hydraulic Power Unit) is recommended for max production. All EDDY Pump suction dredges and excavator cutter heads are powered by field-proven, U.S.A.-built, industrial slurry pumps.

The core of this design is the patented EDDY Pump technology and redefines the pumping industry by being the only pump that utilizes the principles of a tornado to create a synchronized eddy current. This pump is not a centrifugal, positive displacement, or vortex pump, but instead the most efficient high solids and high specific gravity pump on the market. This translates to the ability to pump higher percent solids of material with less water.

For more information visit: www.eddypump.com

For deep-sea mining, battery technology is the ultimate x-factor

By Andrew Thaler for the Deep-sea Mining Observer

Battery Pack of a Nissan Leaf. Photo via Wikimedia Commons.

DEEP-sea mining is frequently framed as a race to the seafloor. While that is not technically true–deep-sea mining has, in fact, been incredibly slow to develop as an industry, with nearly half a century of technological innovation, diplomatic negotiation, and environmental exploration under its belt without producing a single ounce of commercial ore–the deep-sea mining industry is in a race against the one major technological innovation that could upend the industry's claim to being a foundational technology for the renewable resource transition.

The race is not to the bottom of the sea before fossil fuel consumption creates runaway global warming (with a 30-year-horizon, deep-sea mining is well positioned to facilitate the long-term transition to renewables, but is unlikely to make a major impact in the resource demands needed to meet the IPCC 2030 targets). The race is to reach commercial production before the evolving state of battery technology renders the majority of seabed resources superfluous. Battery chemistry is the x-factor that will shape the long-term prospects for the viability of deep-sea mining.

The Lithium-Ion batteries currently favoured by electric vehicle manufacturers depend on electrodes made of cobalt and nickel, along with other rare metals, as well as lithium in both the electrodes and as an electrolyte in the form of lithium salt dissolved in an organic solvent. The composition of polymetallic nodules so closely matches the demands of current generation battery chemistry that The Metals Company CEO Gerard Barron often opens his presentations by holding up a nodule from the Clarion-Clipperton Zone and declaring that 'this is an electric car battery'.

Though not the most pressing metal to be derived from deep-sea mining, Lithium remains one of the most essential elements in modern batteries. Lithium for batteries is primarily produced from two major ore deposits: one in Australia and another in Chile. It also occurs in commercially viable quantities in polymetallic nodules. But a new, and potentially enormous source of lithium has emerged from one of the most polluted places on the planet, the Salton Sea.

The Salton Sea is a once dry lakebed that was refilled to promote agriculture in Southern California by diverting a portion of the Colorado River. Things did not go according to plan, and in the century since the lake was flooded, it has accumulated massive agricultural runoff and, coupled with the steady shrinking of the lake in the last two decades, has concentrated vast tracts of toxic sludge. The Salton Sea has been described as "the biggest environmental disaster in California's history."

The Salton Sea also contains lithium. Locked in hot, salty brine beneath the lakebed, this lithium deposit could produce as much as 600 000 tons per year, nearly ten times the amount of lithium the world produces annually, today. General Motors has partnered with Controlled Thermal Resources to not only mine the brine for lithium, but use the water to produce geothermal energy, simultaneously.

"CTR's lithium resource at the Salton Sea in California is one of the largest known lithium brine resources in North America," Controlled Thermal Resources said in a press release. "CTR's closed-loop, direct lithium extraction process utilizes renewable power and steam—significantly reducing the time to produce battery-grade lithium products and eliminating the need for overseas processing. CTR's operations will have a minimal physical footprint and a near-zero carbon footprint. The brine, after lithium extraction, is returned to the geothermal reservoir deep within the earth."

Controlled Thermal Resources expects to deliver lithium for GM by 2024.

Microbes in cow stomachs can break down plastic

By Frontiers

PLASTIC is notoriously hard to break down, but researchers in Austria have found that bacteria from a cow›s rumen—one of the four compartments of its stomach—can digest certain types of the ubiquitous material, representing a sustainable way to reduce plastic litter.

The scientists suspected such bacteria might be useful since cow diets already contain natural plant polyesters. "A huge microbial community lives in the rumen reticulum and is responsible for the digestion of food in the animals," said Dr. Doris Ribitsch, of the University of Natural Resources and Life Sciences in Vienna, "so we suspected that some biological activities could also be used for polyester hydrolysis," a type of chemical reaction that results in decomposition. In other words, these microorganisms can already break down similar materials, so the study authors thought they might be able to break down plastics as well.

Ribitsch and her colleagues looked at three kinds of polyesters. One, polyethylene terephthalate, commonly

known as PET, is a synthetic polymer commonly used in textiles and packaging. The other two consisted of a biodegradable plastic often used in compostable plastic bags (polybutylene adipate terephthalate, PBAT), and a biobased material (Polyethylene furanoate, PEF) made from renewable resources.

They obtained rumen liquid from a slaughterhouse in Austria to get the microorganisms they were testing. They then incubated that liquid with the three types of plastics they were testing (which were tested in both powder and film form) in order to understand how effectively the plastic would break down.

According to their results, which were recently published in Frontiers in Bioengineering and Biotechnology, all three plastics could be broken down by the microorganisms from cow stomachs, with the plastic powders breaking down quicker than plastic film. Compared to similar research that has been done on investigating single microorganisms, Ribitsch and her colleagues found that the rumen liquid was more effective, which might indicate that its microbial community could have a synergistic advantage—that the combination of enzymes, rather than any one particular enzyme, is what makes the difference.

While their work has only been done at a lab scale, Ribitsch says, "Due to the large amount of rumen that accumulates every day in slaughterhouses, upscaling would be easy to imagine." However, she cautions that such research can be cost-prohibitive, as the lab equipment is expensive, and such studies require pre-studies to examine microorganisms.

Nevertheless, Ribitsch is looking forward to further research on the topic, saying that microbial communities have been underexplored as a potential eco-friendly resource.

Novel technique seamlessly converts ammonia to green hydrogen

By Joohyeon Heo, Ulsan National Institute of Science and Technology

A research team led by Professor Guntae Kim in the School of Energy and Chemical Engineering at UNIST has announced a breakthrough in technology that efficiently converts liquid ammonia into hydrogen. Their findings have also attracted significant attention from academic research communities owing to its new analysis protocol, capable of finding optimal process environments.

In this study, the research team succeeded in producing green hydrogen (H_2) in large quantities with a purity of nearly 100 percent by decomposing liquid ammonia (NH3) into electricity. Besides, according to the research team, such method consumed three times less power than hydrogen made using electrolysis of water.

Ammonia has emerged as an attractive potential hydrogen carrier due to its extremely high energy density, and ease of storage and handling. Moreover, the electrolysis of ammonia to produce nitrogen and hydrogen only requires an external voltage of 0.06 V theoretically, which is much lower than the energy needed for water electrolysis (1.23 V), noted the research team.

In this study, the research team propose a well-established procedure using in operando gas chromatography that enables us to reliably compare and evaluate the new catalyst for ammonia oxidation. According to the research team, with the protocol, they could distinguish in detail the competitive oxidation reaction between the ammonia oxidation and oxygen evolution reactions with real-time monitoring.

With the use of flower-like electrodeposited Pt catalyst, researchers have efficiently produced hydrogen with less power consumption of 734 LH2 kW h−1, which is significantly lower than that of the water-splitting process (242 LH2 kW h−1). "The use of this rigorous protocol should help to evaluate the practical performances for ammonia oxidation, thus enabling the field to focus on viable pathways towards the practical electrochemical oxidation of ammonia to hydrogen," noted the research team.

This study has been co-authored by Minzae Lee, Myung-gi Seo, Hyung-Ki Min, and Youngheon Choi from Lotte Chemical R&D Center, respectively. Their work has also been featured on the inside back cover of Journal of Material Chemistry A, which was made available online in March 2021 ahead of final publication in May 2021.

Microbially produced fibers: Stronger than steel, tougher than Kevlar

By Brandie Jefferson, Washington University in St. Louis

SPIDER silk is said to be one of the strongest, toughest materials on the Earth. Now engineers at Washington University in St. Louis have designed amyloid silk hybrid proteins and produced them in engineered bacteria. The resulting fibers are stronger and tougher than some natural spider silks.

Their research was published in the journal ACS Nano.

To be precise, the artificial silk—dubbed "polymeric amyloid" fiber—was not technically produced by researchers, but by bacteria that were genetically engineered in the lab of Fuzhong Zhang, a professor in the Department of Energy, Environmental & Chemical Engineering in the McKelvey School of Engineering.

Zhang has worked with spider silk before. In 2018, his lab engineered bacteria that produced a recombinant spider silk with performance on par with its natural counterparts in all of the important mechanical properties.

"After our previous work, I wondered if we could create something better than spider silk using our synthetic biology platform," Zhang said.

The research team, which includes first author Jingyao Li, a Ph.D. student in Zhang's lab, modified the amino acid sequence of spider silk proteins to intro-

duce new properties, while keeping some of the attractive features of spider silk.

A problem associated with recombinant spider silk fiber—without significant modification from natural spider silk sequence—is the need to create ß-nanocrystals, a main component of natural spider silk, which contributes to its strength. «Spiders have figured out how to spin fibers with a desirable amount of nanocrystals,» Zhang said. «But when humans use artificial spinning processes, the amount of nanocrystals in a synthetic silk fiber is often lower than its natural counterpart.»

To solve this problem, the team redesigned the silk sequence by introducing amyloid sequences that have high tendency to form ß-nanocrystals. They created different polymeric amyloid proteins using three well-studied amyloid sequences as representatives. The resulting proteins had less repetitive amino acid sequences than spider silk, making them easier to be produced by engineered bacteria. Ultimately, the bacteria produced a hybrid polymeric amyloid protein with 128 repeating units. Recombinant expression of spider silk protein with similar repeating units has proven to be difficult.

The longer the protein, the stronger and tougher the resulting fiber. The 128-repeat proteins resulted in a fiber with gigapascal strength (a measure of how much force is needed to break a fiber of fixed diameter), which is stronger than common steel. The fibers› toughness (a measure of how much energy is needed to break a fiber) is higher than Kevlar and all previous recombinant silk fibers. Its strength and toughness are even higher than some reported natural spider silk fibers.

In collaboration with Young- Shin Jun, professor in the Department of Energy, Environmental & Chemical Engineering, and her Ph.D. student Yaguang Zhu, the team confirmed that the high mechanical properties of the polymeric amyloid fibers indeed come from the enhanced amount of ß-nanocrystals.

These new proteins and the resulting fibers are not the end of the story for high-performance synthetic fibers in the Zhang lab. They are just getting started. «This demonstrates that we can engineer biology to produce materials that beat the best material in nature,» Zhang said.

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- Maintenance & Refurbishment
- Maritime & Harbour Services
- Materials Handling & Equipment
- Metals Industry
- Packaging Industry
- Personal Protective Equipment (PPE)
- Plastics Industry
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Cape Business News is always on the lookout for stories of companies that are shaping the Cape business landscape. If your company has a story to share, in these, or any other business sector, send your story to editor@cbn.co.za for consideration.

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Bossing it like Beijing

OPINION

ON THE CONTRARY

Pieter Schoombee

THE Company of Convivial Conversationalists at the local Grill and Garden were enjoying an interlude of content mid-evening silence as the Governor was seeing to it that no glass remained unfilled. This, as usual, had the result that Luke the Dude's mind wandered off to lands explored only by him.

"It feels like *The Rocky Horror Picture Show*," announced he.

"Useless!" observed Jon the Joker. The Prof's eyebrows raised in unison, Miss Lily smiled politely, Big Ben disagreed and Jean-Jay said, "Merde!"

"Oi, Boyo, care the fill us in?" Colin the Golfer cut to the point.

"It used to be fun," meandered Luke the Dude, "In my London years I lived near a cinema where *Rocky Horror* was the feature every Friday evening. Fans arrived in Rocky dress and make-up with umbrellas and water pistols – which they used whenever it rained in the movie …"

"What do you mean, 'used to be'?" enquired Big Ben.

"A line from *Time Warp*, that song from the movie, says it," enlightened Luke: "Madness takes its toll."

"Which lunacy do you have in mind, Lucas?" wondered The Prof, frowning at his unlit pipe. "The Middle East, where death and suffering accompanied the US withdrawal, while the raving right of the Republican Party are emptying their malice buckets over President Biden – for carrying out an agreement to which the Republican Donald Trump bound America?

"China, where the Communist dictatorship is slapping down the billionaires who made China an economic superpower by creating mega-businesses like Ali Baba and Tencent – and capturing their companies without a care about the destruction? Cadres rule, OK? Hegemony over all the levers of power, including the commanding heights of the economy?"

"As you say, Prof," agreed Luke, "but I am more concerned about our home-grown appetite for the levers of power, seeing that state capture is, after all, the stated goal of the ANC."

"I do not agree!" As is his habit, Big Ben revolted. "President Ramaphosa is the leader of the ANC and he is fighting state capture. Just imagine what South Africa would look like without him!"

"Useless!" exclaimed Jon the Joker. "Your point misses the point. In name, Cyril Ramaphosa is president of the ANC; in reality he leads only an ANC faction. And all its factions share the master goal of ANC control over every lever of power in South Africa."

"I do not agree," insisted Big Ben.

"For goodness sake!" exasperated Jon the Joker. "Have you seen Ramaphosa – who, by the way, enjoys slow-cooking French food, particularly frogs' legs – testifying before the Zondo Commission? The only time he got animated and showed real emotion was when he defended cadre deployment. And as we now know, that goes all the way to the bench of the highest courts in the land."

"Not the park bench," interrupted Jean-Jay in his Gallic way, "where some deployed cadres would be on merit."

"Agreed," smiled Miss Lily, "to nail down Jon's point, let's not forget that Ramaphosa chaired the ANC's deployment commissariat. And, suspiciously as far as I am concerned, all the minutes of those meetings have disappeared. So nobody knows what our president said or did there.

"It's even claimed that minutes were never kept. But surprise, surprise, the minutes of all meetings chaired by his successor are on file and available."

"Such cynicism from someone so young and untainted by journalism…" tut-tutted Irene the Queen.

"Quite right, Miss Lily," contributed Stevie the Poet, "but, speaking of journalism, we should also consider the other side of the story. And that has fortuitously been provided by Mcebisi Jonas, deputy finance minister in the time of Zuma, when state capture was an industry and the Guptas were lining pockets – mostly their own – with ill-gotten South African loot. Marianne Thamm interviewed him for Daily Maverick."

"Well… what did he say?" frowned Big Ben.

"As I remember," continued Stevie modestly, "he waxed lyrical about behind-the-scenes actions President Ramaphosa took to thwart corruption and presidential conniving while he was deputy president.

"For instance, Zuma's appointment of Des van Rooyen as finance minister. Jonas, then deputy at finance, wanted to resign and approached Ramaphosa, who told him to give him time till after the weekend; he was working on it. On Sunday Ramaphosa called and said, 'Listen, it has been reversed. Pravin (Gordhan) has been appointed.'

"Van Rooyen and Gordhan feature in another example: The Great Russian Nuclear Deal, when Russia was going to build eight nuclear reactors in South Africa, costing us a trillion rand. Zuma was very keen on it, although clear heads knew it would be great only for Russia and locals greedy to syphon off loot. In 2011 Gordhan, then on his first stint as finance minister, warned Zuma that he was heading for a disaster as big as the arms deal still haunting him. He was overruled and then removed. Gordhan's successor early in 2014, Nhlanhla Nene, also challenged Zuma about the deal. He was fired for his troubles and replaced by Des van Rooyen.

"The Russian nuclear problem was eventually sorted by Ramaphosa playing his long game – issuing instructions to delay as much as possible. 'He said that by the time we have to make a decision, Zuma will be gone,' Jonas recalled."

"Also, when SA banks wanted to close Gupta accounts, agitation in the ANC was to squeeze the banks via the Treasury. Ramaphosa had 'stood against the tide', insisted on the Constitution and the laws, and succeeded in preventing government intervention."

"I told you so," beamed Big Ben.

"On the other hand," continued Stevie the Poet with a wink at Jon the Joker, "we have respected analysts such as William Saunderson-Meyer on Politicsweb who argue convincingly that Ramaphosa is failing his country and himself.

"We all agree that, compared to Jacob Zuma, Ramaphosa is an honourable president, albeit a timid one. But: Like Zuma, he is the leader of the ANC – a party hell-bent on subjugating all of South Africa to its total control. And that is the poison in the water."

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