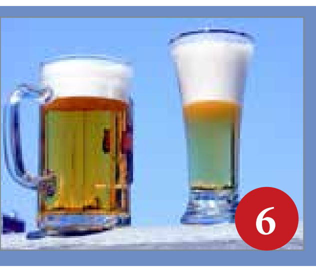
CAPE
Business News

National Distribution
ISSN 1028-1215

FOUNDED 1980 OCTOBER 2021

Cheers!



Heineken to buy Distell?

6

Successful coating

All down to surface preparation.

23

Inherent dangers!

Best cover up!

31

Is Cape Town's own "Eskom" waiting to happen?

Asks Deon van Zyl, Chairperson, Western Cape Property Developers Forum

A month ago, we noted how the delays in public infrastructure tenders, across all tiers of government, are causing economic havoc from national to local level.

We specifically called out Cape Town for the time it takes to assess and award tenders on infrastructure projects. In response, the City of Cape Town released a media statement in which it claimed to have a "successful" track record of awarding 94% of tenders within specified time frames. It stated that the "legislative context", aimed to ensure "fair, transparent, equitable, competitive and cost-effective supply chain management process", meant that the City did not "operate like the private sector." Sadly, the City offered no detail on the 94% procurement success rate. Noting that the bulk of a municipality's tenders are for consumables and minor services, we still wait to hear what the procurement success rate is on fixed capital investment projects and associated professional services. Having enough stationary and operational supply agreements for fleet management do little to repair roads that are fast disintegrating, deliver on a long-overdue public transport network or replace a failing sanitation system. The lack of planning and procurement is now the biggest inhibiter to the growth of the rates base, leaving existing ratepayers to carry the ever-growing operational cost of the City. Which leads me to the City's latest announcement that development is to be slowed down and possibly even halted in close to 150 areas across the metropole due to the lack of water and sanitation infrastructure capacity. Developments in the Helderberg, Milnerton and Blaauwberg districts will be substantially decreased while the City takes up to seven years to provide adequate water and sanitation services to these nearly 150 areas that fall within those districts. While Eskom gives us electrical load shedding, Cape Town gives us both development load shedding and environmental nightmares due to effluent overflows into adjacent conservation areas. Which begs two questions: firstly, apart from collecting rates from its ratepayers, what has the City been doing with the millions upon millions in Development Contributions (DCs) which for years have been paid by developers - exactly for the replacement of bulk infrastructure capacities? And secondly, how soon before we hear that other districts have the same problem? For the property development and construction community, the practical realities of development being stopped in these areas will be multiple.

- Developers who have already spent years in planning, and have rights in place, will be impacted. IE: even zoned land that already forms part of development pipelines, and which had so-called service capacity letters, will either have to slow down or be shut down entirely, potentially resulting in hundreds of millions of rands already spent being lost. It is interesting that no mention of this is made at all in the City's media release, with the implication being that only future developments will be affected.
- In turn, any prospective new developments could now be shelved for anywhere between three and seven years, but more than likely even longer going by the City's history of procurement and implementation.
- In addition, many developments which were feasible will no longer be so, even if and when infrastructure occurs.
- This will lead to pre-sales already obtained now falling away due to these delays and timing-out clauses on contracts that have been signed with prospective buyers.
- As a result, many more companies in our sector will now go bankrupt – developers, contractors and subcontractors – plus, the loss of construction jobs which were dependent on these developments will be in the thousands, affecting in particular the poorest among our Cape Town communities.
- Perhaps most damaging of all, will be the loss of investment confidence, as investors turn their attention away from what was once seen to be a thriving municipality to take their money elsewhere.

Continued on P2

Time to extend financial relief to CT's ratepayers?

CAPE TOWN ratepayers must have had mixed reactions when they read the proud announcement by their City that there was still another R1,8 billion available to right off the debts of those who had not paid their rates and taxes.

Citizens and pensioners in particular would be excused if they felt not a little peeved. They never imagined that their homes -- mortgage-free at last -- would become a financial burden due to the ever-rising amounts the City administration demanded from their pensions. Business owners and job creators were also astonished by the City's press release on the subject. There they read that the City had already found another R1.9 billion towards this stupendous act of charity.

It was hard for us to read that there was apparently R4 billion available in the City coffers to relieve the debts of those who never paid their due rates and taxes. It all begged the question of how Cape Town managed to squirrel away billions if not by charging ratepayers more than they needed to run the City.

Of course, the conventions of accountancy may provide the answer, since writing off a debt doesn't mean money is being given away. It just means debts have been forgiven, never to be collected.

Not that this will make homeowners and business people who pay rates on pain of severe punishment, feel any better.

They may be forgiven for thinking it is time to give those who pay their rates and taxes to the City some relief as well.

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

IN THIS ISSUE

Business confidence in construction at its lowest point

BUSINESS confidence in the construction industry has reached record low levels as the combined effect of the sector's general state of decline and the unexpected shock of mass riots knocked business confidence hard in the third quarter of 2021. This is according to Craig Lemboe, a Senior Economist at the Bureau for Economic Research. *"The Building Confidence Index for 2021Q3 retreated by 3 points to 18%. This is the lowest of all sectors signifying deep concerns among respondents that business conditions in the construction industry are not conducive for the country's planned infrastructure rollout programme"* said Lemboe.

The RMB/BER Business Confidence Index is a percentage of respondents that rate prevailing conditions as satisfactory as an indicator or proxy of business confidence. The index can vary between 0 and 100, where 0 indicates an extreme lack of confidence, 50 neutrality and 100 extreme confidence. Lemboe was addressing delegates attending a webinar on the role of construction in the economic recovery of South Africa, hosted by Construction Alliance South Africa (CASA). Such a low level of confidence is deeply concerning given that it comes at a time when the government has been talking of leveraging on the sector as a cornerstone of the country's economic recovery plan.

The absence of a sustainable pipeline of projects, slow movement in awarding contracts, unending extension of validity on submitted tenders and tender cancellations were highlighted as contributors to the lack of business confidence among building contractors. Commenting on Lemboe's report, the Chairperson of CASA, John Matthews pointed to the lack of a consistent flow of work as a key factor affecting building contractors. *"There are gazetted Strategic Infrastructure Projects (SIPs), that we still don't know when they will go to tender or be awarded. This makes planning impossible."*

The webinar was convened by CASA to consider a recovery path for the construction industry following years of being in decline and the impact of Covid-19. While the sector was not spared by the impact of Covid and the subsequent lockdowns, it was in a general state of decline prior to 2020 due to a lack of work, low productivity, lack of innovation, the slow pace of transformation, industry disunity and corruption among others.

These problems have not gone unnoticed according to the National Planning Commission's Professor Miriam Altman who was a panellist at the event. She provided insights on the government's response to the crisis and invited all to be involved in drafting the National Infrastructure Plan (NIP) 2050. *"We are all part of civil society that should be engaged in these processes. The Draft NIP 2050 is out for comments and we should all make an effort to be involved"* she said.

The line-up of speakers at the event included Isaac Matshego (Senior Economist at Nedbank), John Matthews (CASA Chairperson), Gregory Mofokeng (Black Business Council in the Built Environment), Kile Mteto (South African Women in Construction), Chris Campbell (Consulting Engineers South Africa), Vikashnee Harbhajan (Master Builders KwaZulu Natal) and Andrew Skudder (CEO of RIB CCS).

Construction Alliance South Africa is a historic initiative which has united the construction industry under one umbrella body made up of some 36 professional, contractor, supplier, manufacturer and other allied industry bodies.

The event was sponsored by RIB CCS and AfriSam.

Draft critical skills list flawed - Isaacson

THE Draft Critical Skills list, published in February this year, will be beset by the old problems as well as some new ones, according to Leon Isaacson, immigration expert CEO of the Global Migration Group. As the Chairman of the immigration practitioner's professional forum in 2010, he led the process of analysing the legislation and presenting to the Parliamentary Committee on Home Affairs at the time.

The new draft list according to Isaacson has changed the definition of Critical Skills, which was not defined by the law after 2010.

"The list is effectively meant to be a shortage list, ie a list of skills which we do not have in the short to medium term (3-10 years) in the South African market, and it allows Government and the private sector to recruit and employ these skills from an international skills pool, to fill the gaps.

By creating new criteria, the whole focus shifts and a much stricter qualification-based system has been adopted. This is fine but is conflates skills and qualifications and only recognizes qualifications earned at technikons and universities. IT qualifications earned through vendor certificates and short courses, will not be included, according to the draft.

The international trend in many sectors like, IT, HR ICT, Design and Marketing is away from long courses which become outdated very quickly, towards modular courses which offer employment opportunities at the end of the short course training (3-9 months)."

There is a glaring gap in the draft list, in that there is a total exclusion of Mathematics and Science teachers at Primary and High School levels. This is a short-term crisis, with serious long term consequences for the country and is a national tragedy. As a shortage list, the solution is easy: assess the gaps in these teacher requirements and allocate the unfilled places to foreigners via the Critical Skills list ie if there is a shortage of 5 000 Maths and 5 000 science teachers, put these on the list as skills which are required and expedite the filling of the vacancies. We have heard many stories of highly qualified foreign teachers being kept waiting for years while schools have to go through bureaucracy, only to be refused at the end of the process, because the union objects.

There are other issues which have remained unaddressed since 2010 and we hope that Operation Vulindlela can provide a solution. There are a large number of court decisions at High Court, Appeal Court and Constitutional Court levels which must be integrated into Home Affairs' processes and are still not being implemented by the department.

There is no continuity between the current scheme and the future list with respect to current visa holders. Their eligibility for future visas may be compromised by the hasty implementation of the new list. While waivers are available, the application process takes and unconscionable 6-12 months and their path to Permanent Residence. Those current visa holders who wish to apply for permanent residence will find that their future applications are sabotaged by the changing of the lists. This will disturb many current projects which require these skills, some of which are Government related and commissioned.

"We can only hope that the new list will provide a logical and thorough list linked to the economic needs of the country, and not some ideological political argument. And we need a straightforward adjudication system which follows the Constitution in terms of fairness and efficiency," said Isaacson.

For further information please contact Leon Isaacson on 082-499-4535 or e-mail Leon@globalimsa.com

Is Cape Town's own "Eskom" waiting to happen?

Continued from P1

And then there is the practical reality for every rate paying Capetonian: in the same way that electricity prices have sky-rocketed due to ongoing under-investment by Eskom followed by the catch-up investment phase, the same will now play out in Cape Town. The estimated R8.7 billion upgrades which have been ignored for so very long will now cost ratepayers directly.

This is truly Eskom happening in Cape Town. You can only ignore reality for so long. The rate paying citizens of Cape Town should now ask themselves: "So what is the real cost of chasing clean audits as a political strategy?"

Also, why are the Land Use Management representatives left to carry the bulk of the criticism when previous Spatial Development Frameworks clearly provided development projections for infrastructure planning purposes? Did the engineers not plan, and if they did plan, who stood in the way of releasing funds for infrastructure projects? The accountants or the politicians? Or did the process stall at supply chain management? Although we want to solve the problem, it is time to call for accountability.

While the property development and construction community is left reeling from these new announcements (the WCPDF's phone is literally ringing off the hook), we must realise that now is the time not only for the private sector to step up and demand from government that we be allowed to explore alternatives, but it is also time for government to develop policies that will embrace rather than restrict innovation. Package treatment plants are now the obvious interim solution. Treatment of effluent on-site and the use of the "by-product" of clean water to irrigate gardens may be the future. Developers are already looking at green energy; therefore, it seems the next step will be self-sufficiency. Indeed, this is the dream of many a responsible citizen.

Fortunately, Covid-19 has taught us is that that there is no longer a "normal". We now have Zoom-Towns throughout the Western Cape benefitting from the work-from-home opportunity. Lifestyle and connectivity make for great investment. And thanks to technology, decentralisation has now become a viable opening-up of great opportunities for smaller municipalities in the Western Cape. As one City's door shuts, others willingly open. As the Western Cape Property Development Forum, we certainly look forward to smaller municipalities with good track records in our province declaring themselves "open for business".

Shoprite still snapping up market share

BRACKENFELL-BASED supermarket giant Shoprite Holdings registered a R4.5 billion "profitable" market share gain in the 53 weeks to end July.

This was claimed in the group's latest investment presentation, which also quoted research group NeilsenIQ's estimate that Shoprite supermarket brands – which include Checkers and USave – registered 28 months of uninterrupted market share gains.

NeilsenIQ estimated Shoprite's South African market share gain at 0.94% in the trading period – a commendable achievement in an increasingly competitive market with rivals Pick n Pay, Spar and Woolworths all upping their respective gains.

The most impressive gain was seen in the LiquorShop brand, which managed a 2.5% market share advance.

Shoprite's core South African supermarkets segment posted a strong 17% in trading profits to R9.4bn – showing an outstanding margin of 7%.

A key to future trading successes will no doubt be online innovation, and Shoprite will be buoyed by the strong performance from Checkers Sixty60 1 hour grocery delivery app.

Checkers saw 1.5m app downloads in the trading period with 1.5m of the orders delivered in less than 30 minutes. Sixty60 1 is now live in 233 sites, offering a choice of 17 000 products at in-store pricing.

Pieter Engelbrecht, the CEO of Shoprite, said there was no doubt that the digitally led future was already a day-to-day reality for Shoprite. "However, from an IT perspective, with the adoption of our single system of record a few years ago, the team has become increasingly collaborative and innovative. This way of working influences our daily decisions across the business and plays an increasing role in our ongoing success."

Engelbrecht said this was evidenced by the growth in our supermarkets sales and gross margin and Shoprite's ongoing market share gains.

"In addition to transforming how we operate, our IT re-platforming has facilitated and fast-tracked our transformation as part of our digital and data-led future strategy."

He said the group had recently unveiled ShopriteX, a digital tech hub which blends data science, technology and digital talent to save customers time and money through innovation. "ShopriteX will use our rich customer data to create a 'Smarter Shoprite' and ultimately fuse the best of digital with our physical and operational strength across the continent."

Of course, rival retailers are not sitting on their hands. Pick n Pay also wasted little time on capitalising on an explosion in demand for online grocery shopping during the early stages of the Covid-19 pandemic lockdowns.

Pick n Pay reported that its online division responded very quickly and effectively, doubling its scheduled deliveries and working to launch a quick and responsive on-demand food and grocery app through Bottles.

Pick n Pay has subsequently acquired the Bottles business, and is now integrating various online channels under the banner of picknpay.com.

Woolworths recently reported its online sales had grown by 117.9% and comprised 2.3% of the group's food sales.

The group now has an expanded Click-and-Collect offering and on-demand delivery service through Woolies Dash.1

Retail on the move.

Security shifts in Cape Town

THERE have been some intriguing shifts in the security barriers sector in Cape Town over the last few weeks. The biggest surprise was that Argent Industrial - the JSE listed industrial steel specialist - snatched Cape Town-based American Shutters in a deal worth R57 million.

Argent already owns the Xpanda range of security barriers, which means American Shutters - which also has a range of wooden products - will allow the group to considerably expand its security business.

It seems like Argent clinched a good deal with American Shutters generating attributable profits of close to R10m in the year to end July 2021. Argent - which now has a profitable engineering niche in the UK -has been selling off an array of SA based operations over the last few years. The American Shutters acquisition suggests the group thinks the security barrier sector will remain a viable segment for many years to come.

Trellidor, on the other hand, has managed to find traction in turning around its Cape Town-based Taylor Blinds business. Trellidor bought Taylor and NMC in 2016 for around R148 million.

Trellidor recently reported that in the year to end June Taylor increased revenue 24% to R204 million with NMC - which mainly imports and distributes decorative mouldings - increasing revenue by 41%.

Margins, though, were dented by a new commission structure on product sales as well as a significant increase in imported raw material and freight costs (which were not fully recovered through selling price increases during the year). Trellidor also reported that labour costs at Taylor increased due to unforeseen overtime in an effort to respond to raw material supply delays.

Looking ahead Trellidor CEO Terry Dennison said product innovation would remain a key strategy for both Trellidor and Taylor. "During the financial 2021 both businesses introduced new products to meet changing customer needs in both the local and international markets."

Dennison believed the benefit of these products should be seen in the new financial year, adding that additional product developments were planned for release later in the year.

Importantly, Dennison said pricing reviews were complete and given the relative stability of raw material pricing following the significant (steel price) increases in the past year margin recovering increases would be implemented in the short-term.

'Mathmobile' donation aims to improve numeracy

SUBARU Southern Africa has teamed up with South African NGO The International Math Club Alliance (TIMCA) to improve numeracy and mathematical competence in under-privileged communities around the country.

TIMCA is an organisation that runs and co-ordinates maths clubs and workshops throughout the country. They empower children by teaching them mathematics, which improves their overall confidence, ability and agency to think for themselves. These clubs are predominantly run in under-privileged areas in partnership with schools, orphanages and for children with disabilities.

Subaru Southern Africa has donated a new Subaru Forester to the cause to assist with the transportation of the team as they travel the country far and wide. Nteo Nkoli, Marketing Manager at Subaru SA says: "This is such a critical and admirable project for our country and we saw the mobility challenges that TIMCA was experiencing especially considering that many of the areas in which they work, are in rural communities. The donation of one of our Forester vehicles is a small step towards assisting this cause and we hope we can do more in the future."

The Forester has been dubbed the Mathmobile.

The TIMCA team is currently building a new project in the Harrismith heartland that will touch the lives of 1 000 children early in 2022.

By the end of 2022, TIMCA is hoping to have reached 1 600 children in the area with a view to increase that to 2 000 children in 2023.

Colin Beck, Program Director at TIMCA says: "The experience and the processes we are developing in Harrismith, together with the capabilities of the Forester, really will enable us to take this program further and further in South Africa. It's a superb vehicle even more so on gravel roads and the purple colour really stands out."

Nteo Nkoli encourages more people and organisations to get involved. "The TIMCA programme is a funded organisation and it can only reach these kids by the assistance of others, and I'd like to extend that call to others to assist wherever possible."

TIMCA can be reached by visiting its website https://timca.org/contact-us/

Not nuclear versus renewables, but nuclear AND renewables

ON 26 August, NERSA announced that it would support the Minister's request for a section 34 Determination (authorisation) under the Electricity Regulation Act and published government policy, to include 2 500 MW of nuclear power in the country's energy mix. This happened in the week in which the National Nuclear Regulator (NNR) held public hearings for Thyspunt in the Eastern Cape as a suitable site for SA's second nuclear plant.

Economic growth is directly correlated to a reliable, sustainable, low-cost energy supply and to meet global carbon emission standards, we need to move to clean energy sources. South Africa will decommission coal fired plants, providing 24 500 MW of electricity, over the next 20 years. We need the right energy mix to move the country forward and this includes nuclear in line with global trends.

Koeberg: safely supplying non-polluting electricity to the SA grid for 36 years.

Thyspunt

The Thyspunt site between Cape St Francis and Oyster Bay in the Eastern Cape has been earmarked for South Africa's nuclear energy expansion programme since 1985. Eskom has accumulated decades of environmental, seismic, and marine data for the site and many public consultation processes and Environmental Impact Assessments have found no fatal flaws for the development of a nuclear power plant. The Eastern Cape will benefit from jobs, development and economic activity in an area where unemployment is one of the highest in the country.

In his oral presentation, SANBP spokesperson Des Muller said, "Nuclear Energy at Thyspunt will stabilise renewable energy and balance the grid. Baseload electricity from the Eastern Cape will secure regional energy supplies and reduce significant transmission losses.

Thyspunt is surrounded by highly skilled motor manufacturing industries which would benefit from reliable clean energy and well positioned to be part of the nuclear manufacturing supply chain. Nuclear energy delivers exactly what the Eastern Cape needs right now. The regional Industrial Development Zones and major industries can realise their full potential and retain their global export markets with reliable, clean and affordable energy. During the build, 25 000 highly paid skilled workers and 1 000 expats and their families will have a long-term positive impact on the local economy. We cannot afford to lose this opportunity now; the need is even greater than in 2017 when the nuclear programme was halted due to a legal technicality in the court".

Muller continued, "So called 'green' energy is a misnomer in that the planet needs CO_2 to sustain plant life. Although wind, solar and nuclear energy do not emit CO_2 while delivering power, the low values of CO_2 assigned to these technologies per kWh produced, comes mostly from the materials that go into the construction of these power plants, with wind at 15g/kWh, solar at 45g/kWh and nuclear at 12g/kWh. Below 50g/kWh makes them 'green'. The CO_2 produced in the use of fossil fuels or batteries to stabilise the intermittency of renewables, needs to be added to their account and tariff. All these 'green' technologies produce toxic waste over their respective lifetimes. Nuclear energy's waste management and decommissioning is included in its tariff. I'm not sure the same applies to renewables for the heaps of toxic waste they are starting to produce after two decades.

But – it is not about nuclear versus renewables but nuclear and renewables in an optimum energy source mix for South Africa. We advocate using all energy sources available to SA including coal, where it makes sense. Government and Minister Mantashe recognise this and are delivering the right strategy for our country.

Why nuclear energy is affordable:

- NPP offers include financing @3% and after 20 years, we have an asset supplying very cheap, clean and reliable electricity.
- Planning, construction, operation and maintenance, and decommissioning – is spread over 100 years – Generations of Jobs!
- Over 350 000 job-years* during the build. Over 2 million job-years for operation and maintenance.
- For the first 18 years, nuclear delivers clean baseload at a competitive tariff with no dependency on fossil power backup.
- Once the capital expenditure (capex) is paid in 18 years, the levelised cost of electricity (LCOE) drops by 60% for next 60 years.
- Safety is the nuclear industry's priority under the National Nuclear Regulator's management and subject to the highest stringent global nuclear standards.

South Africa cannot afford to turn its back on the energy source that is powering the rest of the developing world.

**Number of jobs multiplied by time; on average 35 000 jobs over 10 years*

Improvements in construction and building materials sales encouraging - SEIFSA

WHILE the year-on-year uptick in demand for construction and building materials is from a low base, it is a welcome development for the Metals & Engineering Sector (M&E) as it indicates a steady increase in economic activity as the country adjusts to living in a pandemic," the Steel and Engineering Industries Federation of Southern Africa (SEIFSA), have said.

Wholesale trade sales data released by Statistics South Africa (StatsSA) today showed an increase in sales of 10.3% in June 2021 compared to June 2020, to reach R155.7-billion in constant terms, with a month-on-month decline of 5.1% in June 2021, when compared with May 2021, and a 13.8% increase year to date.

The main contributors to the increase were construction and building materials, solid, liquid and gaseous fuels and related products and other intermediate products, waste and scrap.

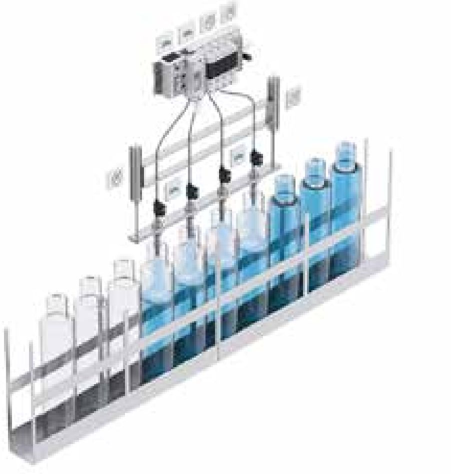
Sales of construction and building materials declined slightly in June 2021, to R11.6-billion from R13.2-billion in May 2021, with year-on-year growth of 29.6% in June 2021. This is mainly attributable to discouragingly rising costs that reduced activity in the residential segment.

According to SEIFSA Chief Economist Chifipa Mhango, the improvement from last year is mainly due to increased building and construction activity this year. He said the increase coincides with a rise in M&E production sales to R81-billion in June 2021 from R78.9-billion in May 2021. In the first six months of 2021 to June, total building and construction activity reached R69.9-billion, thus representing a growth of 69.2% when compared to the first six months of 2020.

Mr Mhango said increased activity in building and construction bodes well for the M&E industry.

"The resulting increase in demand for M&E products is welcome, though we do urge the Government to partner with us to find ways to sustain the recovery of the industry, which has been struggling due to, among others, rising electricity and transport costs," he said.

New app controls several flow rates simultaneously



THE Festo Motion Terminal VTEM combines digitalisation and pneumatics. Quickly activated Motion Apps are revolutionising pneumatics by increasing flexibility, energy efficiency and accelerating production processes. Thanks to the new Motion App "Flow control", the VTEM now makes filling containers such as bottles with nitrogen or other gases more profitable and economical.

Digitised pneumatics marks the start of a new age of automation technology. Motion Apps control one piezo valve for almost all pneumatic tasks. Only one piece of hardware is needed for this: the Festo Motion Terminal. The different functions are controlled using Motion Apps. Festo is gradually developing new Motion Apps that are making the Festo Motion Terminal more and more flexible. This reduces complexity and time to market. Digitised pneumatics intelligently connects the mechanical system, electronics and software - ensuring better overall equipment effectiveness (OEE) with lower energy consumption.

Digitised flow control

An application example: containers for products are often rinsed and filled with gases like nitrogen. With the Motion App "Flow control", users control compressed air and gases flow rate at up to 600 ℓ/min digitally and simultaneously on up to eight independent channels. For precise dosing, the integrated sensors can be combined with external flow sensors. This saves energy and costly gases.

Controlling the flow in litres per minute using the app allows the gas to be precisely dosed. The more precisely the filling quantity is defined, the more accurate the filling will be since the percentage deviation from the target quantity can be optimally detected. This flexible, digitised nitrogen control is tamper-proof.

In addition, the app "Selectable pressure level" moves the filling nozzles to the bottles quickly and accurately, and the flexible parameterisation shortens the cycle times. After filling, the filling nozzles are retracted with reduced pressure to save energy.

Software instead of hardware

Thanks to the fast activation of new functions via Motion Apps, machine developers can create a basic machine type using the Festo Motion Terminal and then select the relevant Motion Apps to equip it with different functions and features as per the customer's requirements. The ability to copy and transfer parameter sets makes planning easier and saves time. Assigning functions via software has the added benefit of preventing tampering and protecting knowhow since it is not possible to tell from the outside which functions the valves are executing.

By additionally using the Motion App "Leakage diagnostics" in the application, maintenance is simplified as it automatically monitors for leaks. Malfunctions can thus be detected and pinpointed to a specific actuator using diagnostic cycles and defined threshold values – the reliable basis for predictive maintenance.

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

Cheers! - Heineken to toast Distell?

BEER brewing giant Heineken has set its sights on Stellenbosch-based liquor group Distell.

Distell, which has Remgro and the Public Investment Corporation (PIC) as its mainstay investors, has issued cautionary announcements indicating Heineken is interested in the majority of its businesses.

Distell has a market value of some R42 billion and owns bestselling brands like Klipdrift, Nederburg, Durbanville Hills, Amarula, Three Ships, Scottish Leader, 4th Street, Savanna and Hunters Dry.

Heineken's advance might, at face value, seem a little strange. For one thing Heineken owns an array of beer brands, while Distell has no beer brands at all.

The last time Distell dabbled in the beer market was back in the seventies in a former guise of Stellenbosch Farmers' Winery (SFW), when it waged the short-lived 'beer war' with the then SA Breweries.

If the Heineken deal materialises, it would not be the first time a beer company has a stake in Distell. One of the terms of the treaty that followed the beer war was that SABMiller retained a significant majority stake in Distell. This stake was eventually sold, several years back, when SABMiller was taken over by beer brewing giant ABInBev.

Still, the big question, at this juncture, is why Heineken would covet Distell's brands.

Liquor industry sources reckon Heineken's interest is twofold.

Firstly, to acquire two of the best cider brands - Savanna and Hunter's Dry - in southern Africa.

Secondly, Distell's impressive route to market in key African countries. The presence of Distell in countries like Angola, Mozambique, Kenya, Ghana and Nigeria was pushed by Distell CEO Richard Rushton, a former SABMiller top executive that has transformed the business at many levels.

Speculation is that Heineken will acquire the whole of Distell - except for the gin business. The bulk of the wine and spirits brands are likely to be sold off with Heineken keeping only the 'mass market brands'- like ciders, Ready-to-Drinks (RTD) and affordable wines and perhaps some spirits.

Heineken's interest might be better explained by the disclosures in Distell's recently released results to end June.

The standout statistic was that cider and RTD volumes were up almost 30%. More importantly - and speaking to these brands' pricing power - was that the volume increase translated into a revenue gain of 33%.

Rushton said growth in the RTD and cider category was driven by Savanna, Hunter's and Esprit with Savanna brand equity growth ahead of the premium beer category.

Growth in African markets was also impressive. African volumes were up almost 37% with revenue increasing 23%. The growth in Distell's African cider and RTD brands was close to 30%.

Rushton pointed out that Zambia, Mozambique, Zimbabwe, Nigeria, Ghana and Uganda delivered stand-out growth. He added that there was core brand growth from Savanna, Hunters and Hunters' Choice (a whiskey brand).

Rushton indicated that Nigeria, Angola and Kenya were all showing the benefits of local production - noting that Distell was looking at continuous investment in local capability build.

While it is expected that Heineken will need to pay top dollar to acquire Distell, the prospect of competing for market share cornered by the vibrant cider brands and replicating the African network would be far more expensive and time consuming.

For instance, Heineken, which has a formidable rival in ABInBev in Africa, could leverage Distell's strong route to markets in various African countries to better market its core beer brands.

Pumps offer brewer increased efficiency and savings

THE installation of Grundfos pumps and related equipment as part of an international beer brewer's expansion in Gauteng highlights a common commitment to water and energy efficiency.

A range of Grundfos submersible pumps, smart digital pumps and vertical multistage centrifugal pumps are installed at this Sedibeng-based brewery's wastewater plant and its water treatment plant.

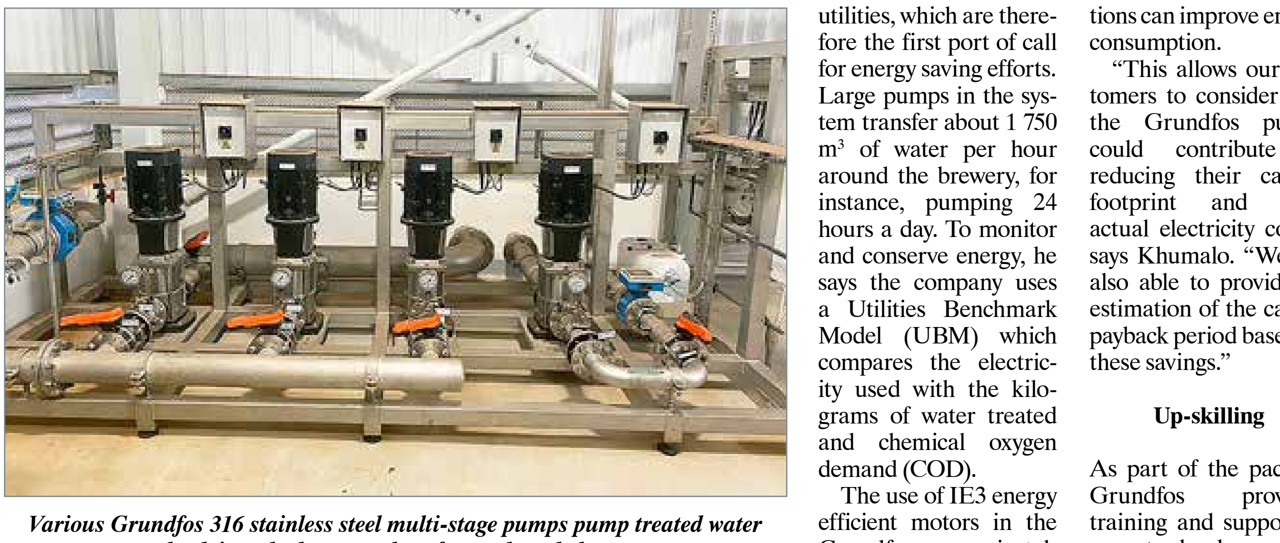
The installation, which is in line with the brewer's commitment to conserve water as a precious resource, included the installation of a water recovery plant, allowing the operation to further optimise water use within its facility.

The expansion also saw the upgrading of the water treatment plant, where clean 'raw' water from the municipality is further purified for brewing purposes. After the beer is produced, beer residues and water used for pipe cleaning is treated to meet regulated environmental discharge limits. This can also be re-used for cleaning, reducing the need to draw on the municipal supply.

According to Raymond Makgoga, Grundfos associate sales engineer, three Grundfos submersible wastewater pumps were provided to transfer water from the brewery to the water recovery plant. After the sedimentation process, water is pumped to the reclamation plant for final treatment. In this circuit, around 6 000 m^3 of water is pumped daily, with the pumps being driven by 15 kW high-efficiency motors with IE3 rating.

Accurate dosing

"In the water treatment plant, a number of Grundfos Smart Digital S and Smart Digital XL pumps are installed, mounted on dosing skids," says Makgoga. "These must accommodate a range of chemicals from sodium hydroxide and sodium hypochlorite in the reverse osmosis circuit, to citric acid and anti-scalant in the ultra-filtration circuit."



Various Grundfos 316 stainless steel multi-stage pumps pump treated water back into the brewery plant for wash and clean.

Makgoga describes this function as a critical part of the brewery's operation, and comments on the value of Grundfos control systems.

"These systems give a high level of control, communicating vital data between the pump and the PLC so that chemical dosing is accurate and appropriate," he says. "This eliminates over-dosing and ensures that chemicals are not wasted; the Grundfos pumps are able to measure the volumes of water flow and then dose in proportion."

The dosing pumps were supplied with the complete package including Grundfos's CIU 500 interface. The CIU 500 is a standard interface for data transmission between an industrial ethernet network and a Grundfos pump or controller, making data exchange possible between Grundfos pumping systems and a PLC or SCADA system.

Other accessories in the package were pressure relief valves, pressure loading valves for maintaining pressure on the discharge line, and pulsation dampeners to ensure smooth dosing flow.

Saving energy

Energy efficiency is also an important factor, considering the significant energy consumed by wastewater treatment plants. Some 28% of the Sedibeng facility's energy is consumed by utilities, which are therefore the first port of call for energy saving efforts. Large pumps in the system transfer about 1 750 m^3 of water per hour around the brewery, for instance, pumping 24 hours a day. To monitor and conserve energy, he says the company uses a Utilities Benchmark Model (UBM) which compares the electricity used with the kilograms of water treated and chemical oxygen demand (COD).

The use of IE3 energy efficient motors in the Grundfos pump installations has assisted in reducing energy consumption to about 1,3 kW per kilogram COD treated, from a level of over 1,9 previously. These statistics are tracked daily, and the new equipment helps to facilitate this data tracking as the operation works towards even more demanding energy saving targets.

According to Nancy Khumalo, service sales at Grundfos, energy savings can be modelled in advance to indicate how Grundfos pump installations can improve energy consumption.

"This allows our customers to consider how the Grundfos pumps could contribute to reducing their carbon footprint and their actual electricity costs," says Khumalo. "We are also able to provide an estimation of the capital payback period based on these savings."

Up-skilling

As part of the package Grundfos provided training and support to operator-level employees at the brewery. This allowed the plant staff to 'take ownership' of the equipment and understand more about its functioning.

"Grundfos has been proactive in embracing our sustainability vision, and is now guided by our Grundfos Strategy 2025," he says. "Focusing on people and water, we share the same passion as our customers to impact positively on our global future through high-value, technology-driven solutions."

Mining the deep oceans – the main players

DEEP-SEA mining involves a collection of government, intergovernment, industry, scientific, academic, civil society and other interests.

Exploration

As of January 2020, the International Seabed Authority (ISA) has issued permits and entered into 30 contracts for exploration for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts in the deep-seabed with 21 contractors.

Eighteen of these contracts are for exploration for polymetallic nodules in the Clarion-Clipperton Fracture Zone, Indian Ocean and Western Pacific Ocean. There are seven contracts for exploration for polymetallic sulphides in the South West Indian Ridge, Central Indian Ridge and the Mid-Atlantic Ridge and five contracts for exploration for cobalt-rich crusts in the Western Pacific Ocean and the South West Atlantic.

The contractors are a mix of corporate enterprises and state-owned companies, with several governments keen to establish the rights to mine and to gain a foothold on the international seabed. Of the thirty exploration contracts the ISA has issued to date, at least eighteen are held by only seven countries – China, France, Germany, India, Japan, Russia and South Korea – through their state owned companies or government agencies and ministries. Another seven contracts are effectively in the hands of three private companies: DeepGreen, a privately held Canadian company; UK Seabed Resources, a subsidiary of US based Lockheed Martin; and Global Sea Mineral Resources, a subsidiary of the Belgium company DEME Group.

A growing group of scientists is also actively studying the deep sea (about which we still have so little information) and the potential impacts that mining would have at depth. Some of the scientists are affiliated with national agencies and/or corporations with a commercial interest in deep-sea mining that are prospecting and exploring for deep-sea minerals, in which case their findings are often kept confidential though several such companies have allowed scientists working for them to publish their findings. Others conduct their work in the context of regional or global initiatives or groupings which make their findings publicly available. These include the MIDAS Project, the JPI Oceans Mining Impact I & II projects, the Abyssal Biological Baseline Project; the Deep Ocean Stewardship Initiative, and INDEEP – a global network of deep-sea scientists, among others.

Deep Sea Conservation Coalition Member Organizations

DSCC member organizations focused on deep-sea mining include Blue Marine Foundation, Conservation International, Deep Sea Mining Campaign, Earth Works, Ecologistas En Acción, Fauna & Flora International, German NGO Forum on Environment and Development, Goa Foundation, Global Ocean Trust, Greenpeace International, The Oxygen Project, Pew Charitable Trusts, Sciaena, Seas At Risk, WWF.

For more information visit: http://www.savethehighseas.org/latest-news

THE BEE IN MY BONNET COLUMN

The next event in Fred Kano's Circus

BY the time you read this dear reader, we shall be in the midst of election fever, being bombarded by rhetoric from many sides by those that seek power from your simple cross.

Thinking that we are in the premier league when playing in the third division, was compounded when the ANC failed to meet the IEC's nomination deadline, what is not, but entirely predictable, is the way the IEC has bent over backwards to try and accommodate the ANC's error, by a) appointing a tame judge to prepare a report to justify a delay, b) then appealing to the Constitutional Court to defer the municipal elections until next year and upon that failing, c) finagling the nominee registration dates to allow the ANC more time to comply.

In addition to the President's largely unbelievable responses to the Zondo Commission (see more below), another lulu of the spring season was the announcement that 200 of our defence force were in need of some serious training and that the only place that could provide such a service was, you guessed it, the same place that offers superior mechanics, teacher training and civil engineering expertise, CUBA. Yeh, right. Oh and the Kusile explosion – cause still under investigation – will put another R2-billion nail into Eskom's R400 billion plus debt coffin.

What makes my life as the editor more challenging is that in order to ensure that you, the reader, get a balanced view of the issues we propagate in these pages; I have to be even handed in the opinions expressed here, even though I may personally not agree or believe them.

It is common cause that as a business publication we should be supporting the concept of excellence in a capitalist free market and find that a mediocratic socialist agenda is an anathema to development.

Lord Acton's famous phrase about absolute power corrupting absolutely, came to mind when I was (very nearly) startled by President Ramaphosa's admission (amongst not knowing what was going on during his tenure as Deputy President) to the Zondo commission that he saw nothing wrong with 'pre-approved' lists of cadres for top positions in SOE's, government departments, police and the judiciary; was the outcome of an unelected 'approval committee' of cronies where nominees were chosen on the basis of skin colour, race and as a reward for loyalty to the ANC- rather than the competence of the individual to hold that position.

That we now know has resulted in a brace of incompetents being appointed to strategic enterprises that, all but possibly two have been dismal failures characterized by looting, corruption, mismanagement and massive government bail outs of yours and my money that should have been earmarked for developing the economy and uplifting the disadvantaged.

It would be naïve to think that this selection process doesn't happen in most other democracies but the difference is that the 'panel' usually comprises elected officials that are accountable to the country's citizens and the chosen have not destroyed the country's economy with their competence.

So, when the time comes to place your cross on the ballot paper, you have a simple choice – excellence or mediocrity but remember, that if it looks like a duck, sounds like a duck and smells like a duck then it's a b****y duck!

Eish.

Hacking and looting hamper recovery in the Freight Transport sector

THE recent looting and unrest have had a massive impact on the majority of sectors measured by the Ctrack Freight Transport Index.

The Ctrack Freight Transport data shows a split set of data. On a year on year basis, the numbers look extremely strong for the sector. However, the quarter ending in July shows the first decline in a year.

> "The Road Freight Association estimates that about 250 trucks were totally destroyed..."

The decline between June and July is the steepest decline since April 2020, when level five lockdown restrictions were implemented.

A decline of 9,7% (slightly estimated due to some Transnet Port data not being available in time) between the months of June and July shows that the freight transport sector was severely affected by the looting in KZN and Gauteng.

As a result, the overall Ctrack Freight Transport Index declined to levels last seen in August 2020. It is almost as if a whole year of progress was wiped out in a few weeks.

Every day over 6 500 containers move in and out of South African ports. There is no way that this operation can run without the sophisticated computer system that is in place.

Modern logistics is a system that is held together by information and computer networks. Hackers know this and were most probably hoping that they would be paid to put things right in the wake of the chaos caused by the downtime of Transnet's computer systems.

The damage to the South African economy caused by both these events was significant and will be felt for some time. While the crossing of borders is still tedious due to the COVID test requirements, the impact could last longer than normal. The timing of these two incidents, in close succession of each other, could mean that delays at the ports could take weeks, if not months, to resolve.

The country's GDP could have grown by about 1% if not for these two events, which affected the logistics industry, centred in Kwa-Zulu Natal, but with effects felt in Gauteng, as this is where the majority of the goods were headed.

All but one Freight Sector declined

The majority of sectors measured by the Ctrack Freight Index have declined in recent months. Sea Freight was the biggest loser declining by 24,3%, followed by Storage and Handling with a decline of 16,2%. Even the two fastest-growing sectors, Road Freight and Air Freight, have declined with losses of 9,3% and 3,2% respectively.

The measurement of truck movements through 84 key points across the country backs this data up with a decline of 11,5%. However, points in Kwa-Zulu Natal reported more significant declines of over 20%. Pipelines were the only sector to show growth.

Losses are massive for companies, clients and staff

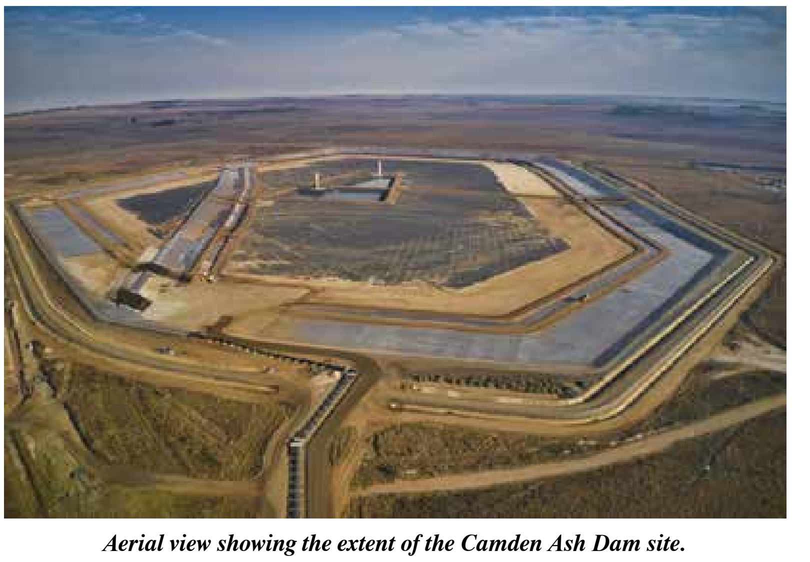
The monetary losses and the delays suffered by the Road Freight sector are estimated to be in the region of R9 billion, although some of those losses should be made up in the catch-up period. Transnet ports also lost well over R1 billion. The losses in other sectors are still to be calculated but with ten major distribution centres destroyed while many other storage facilities suffered damage.

The Road Freight Association estimates that about 250 trucks were totally destroyed while many more suffered minor damages such as broken lights and windows.

Clients had to close for days on end, as intermediated stock for manufacturing did not arrive while in some cases shelves stood empty.

The global microchip shortage caused by worldwide supply chain issues was exacerbated by shipments being stuck in the harbours for an additional ten days.

Camden site reaches 2 million LTI free hours milestone



Aerial view showing the extent of the Camden Ash Dam site.

THE Eskom, Camden Ash Dam project was issued to WBHO as a single phase with two packages, namely Phase 1A and Phase 1B. The works included the construction of an ash disposal dam, an ash water return dam and associated ancillary works. The project was necessitated by the existing ash dam reaching the end of its usable life span and the need for additional capacity was required for continued electricity generation. The project has surpassed 2 million LTI (Lost time injury) free hours. This represents no LTI's since the project's inception.

The Camden ash dam is a multi-disciplinary endeavour coalescing civil, mechanical and electrical elements to bring the project to fruition. The newly constructed ash dam facility has a combined phase 1 footprint of 63ha. WBHO has been engaged in construction works on the Camden project since 2017.

The scale of the project coupled with South Africa's desperate need for electricity has put the Camden project in the spotlight. Given the above, WBHO was in the unique position to work jointly with the stakeholders to bring the project to fruition as a matter of national interest.

The intertwined nature of works has proven to be the biggest challenge by safely executing the works. Enforcing the understanding that safety is not a team by team 'blinkered' activity but rather a blanket that covers the entire site. The safety ethos has not only been to look beyond the actions of yourself and those immediately around you but to look out at the greater site and understand how you as an individual affect the safety dynamics of the site and how others do the same. This appreciation for the actions and counter actions of others as well as yourself has allowed all the participants on site to be more mindful of what and how they are conducting their activities, on site.

Visible field leadership which demonstrates management's commitment to safety as well as one on one engagements with the labour force to drive home the importance of safety first, were vital to a safe work culture.

Putting in place safety protocols, monitoring them and ensuring they are adhered to have been the crowning achievement of the sites safety team and the larger project team as a whole.

The WBHO site team has implemented a number of safety initiatives that emphasise the commitment the project team has to safety, both on and off site. The 2 million LTI free hours has been a tremendous achievement and the commitment of all participants to a safe working culture is applauded and indicative of The WBHO Way.

Shedding the light on Eskom and its mountain of debt

Eskom released its FY20/21 financial results on 31 August 2021. These were characterised by the persistent strain on the liquidity and profitability position, high gross finance costs and some challenges to operational efficiency.

By Sithembiso Garane, Head of Listed Credit @ Futuregrowth

THE group incurred a loss after tax of R18.9 billion, a slight uptick from the previous year's loss of R20.7 billion. The audit opinion was qualified owing to irregular expenditure and going concern risk. The government injected R56 billion to assist in reducing the debt burden.

Eskom current debt maturities were reduced to R44.9 billion from R128 billion in FY20. The group's cash generation capacity has continued to deteriorate since its five-year peak in FY17 at R47.4 billion and is currently sitting at R30 billion.

The prevailing theme remains Eskom's unsustainable debt, despite the recent equity injection and reduction in capital expenditure. Operating expense increases offset the revenue surge. Primary energy cost pressure and the inability to contain employee costs continue to pose a significant challenge in the utility expenditure reduction programme.

The energy availability factor decreased from 66.64% to 64.19%, largely attributed to increased maintenance. During the year, two Kusile power stations were added to the grid, contributing 1 500MW, and Medupi's final unit was handed over to Eskom in July 2021.

Investigations into the recent Kusile explosion are ongoing, with the damage estimated at R2 billion. Eskom expects to incur an additional R38.4 billion in environmental project costs on Medupi, as part of its loan conditions with the World Bank.

Financial highlights FY20/21

1. Revenue was up 2.38% year-on-year, solely owing to the 8.76% tariff increase. Sales volumes significantly declined by 6.7% (from 205 635 GWh to 191 852 GWh) off the back of the Covid-19-induced slump in demand across all customer categories. Management noted that sales volumes are expected to rebound in FY21/22, albeit not to pre-Covid levels. Revenue is expected to be aided by 15.06% tariff increase in the medium term.
2. Interest bearing debt (IBD) reduced from R483 billion to R401 billion, assisted by the R56 billion equity injection from the government. The reduction in the capital expenditure programme over the reported period also contributed to the net redemption of debt. Finance costs remained very high, despite the slight decrease from R48 billion to R45 billion. As a result, the effective cost of debt spiked from 9.58% to 9.66%. This remains a concern for the issuer, as it seeks to extricate itself from this debt overhang.
3. Primary energy costs continued to rise in spite of the lower demand: 3.4% year on year, due to a combination of coal and import cost escalation, higher utilisation of open cycle gas turbine (OCGT) and renewable energy independent power producers (IPPs). The IPPs contributed 24.0% in total primary energy costs and accounted for 6.0% of energy generation. The growth in contribution was stunted by the force majeure on wind energy procurement during the hard lockdown. Coal contribution, which currently accounts for 85% of energy generation (and 65% of the cost base), is expected to decrease as Eskom rolls out its decarbonisation strategy.
4. Eskom's average employee cost decreased from R775 000 to R735 000 as a result of the slight reduction of headcount from 44 000 to 42 000 and a management salary freeze. This is expected to be dampened by the 7% wage increase settlement over the next three years. Employee costs remain the Achilles heel for the counterparty as it grapples with its cost base. A 42 000 headcount is still a far cry from the 35 000 optimal level as noted by management. The total employee cost accounts for 16.35% of Eskom's revenue.
5. Municipal debt arrears increased by 26% year-on-year from R28.0 billion to R35.3 billion (including interest accrued over time). This figure was R6 billion in FY16 and is escalating very fast. Efforts to address collections from the top 20 defaulting municipalities continue to be questionable. Eskom has entered into a payment agreement with 12 of the 20 defaulting municipalities in an effort to increase recovery; however, 10 of the 12 are yet to comply with the agreement.
6. The utility remains completely reliant on its R350 billion government guarantee programme to raise debt in the market. Currently, the guarantee headroom is R47 billion, inclusive of the R32 billion committed drawdown. The expected debt service costs for FY22 are R71 billion (FY21 103 billion), R31 billion of which are finance costs. Eskom generated R30 billion from operations, hardly covering its net finance costs (R33 billion in FY21). The total funding requirement for FY22 is R39 billion which can be fully absorbed by the guarantee headroom.
7. Eskom recorded a net loss for the year of R18.9 billion and R37.2 billion in irregular expenditure, which is the main driver for its audit qualification. The reduction in debt does give some reprieve on debt service costs; however, the entity's failure to generate sufficient cash from operations remains a significant risk.

Eskom expects to fully unbundle the transmission division by December 2021, followed by the generation and distribution divisions in December 2022. This is subject to all regulatory and legislative compliance.

It is our view that management may be somewhat overly optimistic with these timelines, given potential political impediments.

The functional separation of the three entities is said to be complete, and plans are afoot to create legal entities that will be operated independently. Some efficiencies may be unlocked through this exercise, but this will not address the core problem of debt spiralling out of control.

The majority (60%) of Eskom's employee costs come from distribution and shared services – a low-margin division and a cost centre. Other high operating expenses from the generation division are due to the provision for the decommissioning costs of coal generation and are not expected to remain at current levels in the medium term. The third-party generated energy (IPPs and imports) forms part of the transmission division cost base.

Management now has to grapple with the IBD split amounting to R416 billion (as at FY20) across the entities, which requires bondholder consultation and approval. Our expectation is that this will not be a swift process. Further details are yet to be revealed, including how the R350 billion guarantee will be segregated, and business cases for each division so that investors can assess each division's investability.

More importantly, all these interventions do not address Eskom's core problem: the debt trap. The utility's management has alluded that more government assistance to the tune of R200 billion will still be needed. It is our view that, regardless of the divisionalisation and liberalisation of the energy sector, a debt solution is still required. Failing this, the debt problem will be inherited by all or some of the soon-to-be established entities.

Some encouragement but concerns remain

Futuregrowth is encouraged by Eskom's accelerated execution of its long-communicated divisionalisation strategy and government's equity injection. However, these interventions are barely scratching the surface when it comes to extinguishing Eskom's solvency risk. The remaining operational inefficiencies and unsustainable debt burden patently require further extraordinary support. We are cautiously optimistic that a decisive debt solution will be found, and we are of the view that comprehensive divisional business cases will determine the success (and/or duration) of the debt separation process.

Government's recent intervention does indicate that Eskom remains important to the state and that the likelihood of government support is still high. However, these intermittent interventions do not solve the going concern risk status of Eskom, and its high dependency on the shareholder. Eskom needs more than just unbundling to address its solvency and liquidity risk.

Published on www.futuregrowth.co.za/insights.

The role of the credit bureaus and how they operate

By Annelene Dippenaar, Chief Legal and Compliance Officer at Experian Africa

THE main function of credit bureaus, as intended in the National Credit Act (NCA), is to protect consumers from irresponsible lending and over-indebtedness. For this reason, a credit bureau gathers, stores, and reports credit-related financial information of consumers that includes successful applications for credit or services, such as loan agreements, credit cards, store cards, insurance products and cellphone contracts.

The intention of reporting this information is to allow a prospective lender to be aware of all the agreements that the consumer is already party to and how well the consumer has conducted the repayment under those agreements to make an informed decision in terms of creditworthiness. It helps them understand how likely the consumer is to honour the payment on what is being applied for; and along with salary and expenses information provided by the consumer, assess affordability.

Through this process, credit bureaus play an important part in supporting financial inclusion and economic growth by making credit and services accessible to more people, enabling lenders and businesses to reduce risks associated with lending and promote responsible lending. Risk-based lending and services can also mean lower service costs and reduced costs of credit, which means lower fees for the consumer.

Annelene Dippenaar

What does a credit bureau do?

Credit bureaus provide information about an applicant's credit profile to credit providers, other financial service providers and providers of services on credit or for cash. This information, combined with the provider's own business rules and internal information, determines whether credit or access to services is approved or declined and may even impact the pricing of the service.

Credit bureaus also compile credit reports along with credit scores. A credit report documents all of a consumer's credit and related information (i.e. properties owned), showing how they manage and repay the credit or services given to them. A credit score is a number that reflects the likelihood of the consumer paying credit back. A credit score is based on the consumer's credit report information, which will show credit providers the predicted level of risk of a consumer defaulting (not honouring your payment obligations).

Experian is committed to improving consumer financial literacy and is dedicated to helping consumers understand what a credit score means and how to manage their overall credit health.

The more insight and understanding people have about credit and the information on their credit reports, the easier it is to build and strengthen their overall financial wellbeing. Financial health plays a critical role in enabling access to credit and affordable services. Access to credit opens the door to opportunities for people to transform their lives – from homes and healthcare to education and entrepreneurship.

Working in a POPIA environment

Under the Protection of Personal Information Act (POPIA) and as part of the credit environment under The National Credit Act (NCA), credit bureaus have responsibilities to both consumers in South Africa and companies that have a business relationship with a bureau.

Credit bureaus look after vast amounts of data. In this modern, data-rich world, it can be easy to lose track of how your data is being used, which is why credit bureaus need to provide complete transparency over what they hold and how they use it.

Fiscal consolidation out the window

So says Fanie Brink, Independent Agricultural Economist

"THE assumptions made by various economists and asset managers after the announcement of the economic growth rate for the second quarter two weeks ago[1] that the government's budget deficit and its debt burden in relation to the Gross Domestic Product (GDP) will be reduced have now been proven to be unrealistic," says Fanie Brink, an independent agricultural economist.

The assumptions that the "budget deficit for this year will only be 7% compared to the 9,3% and that the government's debt burden in relation to the GDP may be closer to 70% than the 88% budgeted for in February can now be totally ruled out.

These assumptions were based on the higher international metal prices that increased the profitability of the mining industry and therefore the government's revenue but that it will not be accompanied by increases in government spending.

The National Treasury has informed the parliamentary committees on fiscal and economic issues last week that the "government's fiscal stance has shifted from one of consolidation to expansion." The "extra spending will be funded by the tax bonanza arising from the commodity boom with its proposal to allocate R33 billion for Covid-19 relief and to address the consequences of the recent unrest and will not affect the fiscal framework."

The Parliamentary Budget Office which also provides input to the committees argued that "the Treasury's failure to adopt an expansionary fiscal stance in the first place contributed to the social insecurity and poverty that underlay the recent looting and destruction that devastated KwaZulu-Natal and Gauteng in July this year. The government will inevitably have to use this windfall of the higher international metal prices to reduce the rising poverty, hunger and unemployment to try to deal with an outbreak of any further riots as far as possible. Several years of fiscal consolidation have had a cumulative negative impact on employment, investment and economic growth. The fiscal choices made had increased social and political instability. The fiscal framework had to provide for increased spending."[2]

Brink said this is the problem with socialism as socialists believe that more spending, budget deficits and debt can create "employment, investment and economic growth" which is clearly economic illiteracy and incompetence! The "failure to adopt an expansionary fiscal stance" was not the primary reason for the "social insecurity and poverty" and the resulting "looting and destruction" but the socialist ideology of the government that irreversibly demolished economic growth. The very clear results were the widening gap between the revenue and expenditure of the government that was responsible for the increasing budget deficits and debt, higher poverty, famine, unemployment and inequality.

The new Minister of Finance, Enoch Godongwana, however, said only a week after he was appointed when he informed the investment community that "nothing is really going to change in terms of South Africa's fiscal position and commitment to debt stabilisation."

He also said during the last party lekgotla that the "extremely difficult financial reprioritisations and policy considerations must be agreed upon by everyone in the government if the government wants to meet its existing spending commitments, wants to stabilise the fiscus and avert a full-scale financial crisis."

These latest developments shows very clearly that the government cannot and will not be able to stabilise its destructed fiscal situation which will create "a full-scale financial crisis" as there is absolutely nothing that indicates that it will improve especially in the absence of any economic growth!

As the former editor of the Business Day and Financial Mail, Peter Bruce, has said: "… our core problem isn't corruption or incompetence, though they are the moving parts of the neon sign at the entrance to SA. The problem is plain poor policy and the ANC's absolute inability to understand how to turn one rand into two rand. We chase transformation or reducing inequality at the expense of growth or arguing that growth wouldn't fix them. Corruption doesn't lead to poverty and the kind of misery South Africans suffer. Very bad economic policies do."

The Austrian-British economist, Friedrich von Hayek, has said: "If socialists understood economics, they wouldn't be socialists."

[1]"Growth prospects are unrealistic" *https://bit.ly/2YkyW6Q*
[2]"Expansionary fiscal stance ushered in with new relief spending *https://bit.ly/3uzAjub*

Iron-Air 100-hour storage battery set to slash costs

By Bob Yirka , Tech Xplore

OFFICIALS with battery maker Form Energy have announced the development of the Iron-Air 100-hour storage battery - a battery meant to store electricity created from renewable sources such as solar and wind. As part of their announcement, they note that their new battery is based on iron, not lithium, and thus is much less expensive to produce.

The team at Form Energy describe their new battery as a multi-day energy storage system - one that can feed electricity to the grid for approximately 100 hours at a cost that is significantly lower than lithium-ion batteries.

The basic idea behind the iron-air battery is that it takes in oxygen and then uses it to convert iron inside the battery to rust, later converting it back to iron again. Converting back and forth between iron and rust allows the energy that is stored in the battery to be stored longer than conventional batteries.

The batteries are much too big and heavy for use in small applications (or cars) - each battery is approximately the size of a washing machine. Instead, they are meant to be hooked together in massive grids capable of storing enormous amounts of electricity for days at a time. Cells are stacked inside of a water-based, non-flammable electrolyte, which the company claims is similar to that used in standard AA batteries - the cells are made of iron and air electrodes.

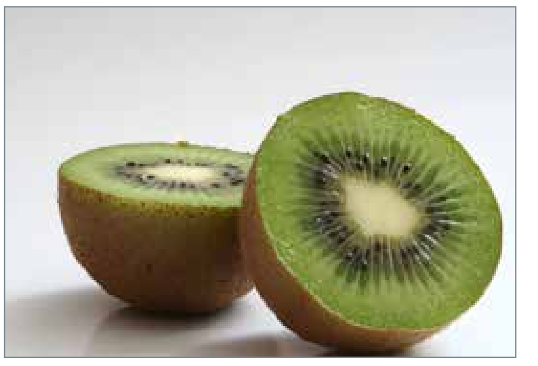
When grouped together, thousands of the batteries could be used to store huge amounts of power - they suggest that a grid covering approximately one acre using their low-density batteries could provide power for a one-megawatt system. The high-density version, would be triple that.

On the website, officials with Form Energy suggest that their batteries provide a solution to a growing problem-managing the variability of renewable energy sources. They suggest that other current battery technologies are not cost-effective, noting that they typically cost up to $80 per kW/h of storage. Their new battery, they claim, costs under $6 per kW/h in its most basic form, and approximately $20 per kW/h when outfitted as part of a total system - a price point, they further claim, that many in the field describe as necessary for renewable systems to replace those based on fossil fuels. They also note that some big names have invested in their company, such as Bill Gates and Jeff Bezos, and that they have already forged deals with some utilities, such as Great River Energy in Minnesota.

"Converting back and forth between iron and rust allows the energy that is stored in the battery to be stored longer than conventional batteries."

Make kiwifruit part of the agriculture master plan

By Louw Pienaar, senior agricultural economist at the Bureau for Food & Agricultural Policy and Wandile Sihlobo chief economist of the Agricultural Business Chamber of SA



SA has a distinct advantage over New Zealand, the world's leading exporter of the fruit, thanks to its relative proximity to the EU

Agriculture has a vital role to play in SA's economic reconstruction and recovery path after the Covid-19 shock. The government appreciates the potential of this sector, and has thus partnered with the private sector in drafting an Agricultural & Agro-Processing Master Plan. We expect it to be launched in the coming months, and with the commitment and implementation of all social partners there could be progress.

"Domestic demand is also likely to grow in the coming years. SA is a net importer of kiwifruit..."

While the broad focus of the plan is crucial, when the time for implementation comes the direction will have to be more granular, with a clear indication of interventions to be made to enable growth in the sector. Such interventions will range from infrastructure such as improvements in roads, irrigation facilities and water regulations to aspects of animal health, farm safety, stock theft, and more contentious interventions on land governance.

A clear focus on commodities with the potential for growth but that have not featured as prominently as crops such as maize, citrus, and wine grapes is also required. One such commodity is the kiwifruit.

The SA kiwifruit industry is small (about 200ha under cultivation), though production dates back more than 40 years. The fruit is grown in Limpopo, Mpumalanga, KwaZulu-Natal and there has been resurgence recently in the Western Cape. While the local industry has operated in the shadows of major fruits for many years, interest is growing. This is driven in part by changing global consumer preferences and the focus on a healthy diet. We believe it is possible that the kiwifruit industry could experience impressive expansion — as was the case with blueberries, which were stagnant for a long time expanded greatly as global demand spurred SA farmers to increase their production.

Several new varieties of kiwifruit have entered SA recently, with unique colours and flavours, and some are well suited to local growing conditions. Production hasn't been reserved for local consumption — exports amounted to about 564 tons in 2020, valued at R23m. Still, it is a small player in the global market.

The world's largest kiwifruit producers are China, New Zealand and Italy, producing about 75% of global output. However, China remains a net importer of the product owing to significant domestic consumption. It imported about 116,000 tons besides the 2.2-million tons it produced in 2020.

New Zealand is the world's leading exporter of kiwifruit, followed by Italy and Greece. Globally, demand for Kiwifruit is clear from the strong rise in imports over the past two decades, which have grown from R6.2bn in 2001 to R58bn in 2020. In volume terms exports increased from 810,000 tons to 1.5-million tons in the same period. The current global trend towards a more healthy diet is sure to drive increased demand for this superfruit, which is full of nutrients and antioxidants with proven health benefits.

We believe kiwifruit is well positioned as an industry with a potential for expansion in SA, since a large portion of the domestic production ripens earlier than in New Zealand, an advantage since it allows producers to access the global market earlier.

In addition, SA has an established agricultural trade relationship with the EU, and is closer to that market than New Zealand, which should translate into a price advantage. There is also an opportunity for exports into Africa and its oceanic islands, which are potentially valuable new markets.

Domestic demand is also likely to grow in the coming years. SA is a net importer of kiwifruit, and we view this as an immediate opportunity for farmers. The knowledge of the fruit industry in scaling production of berries, cherries and other alternative crops also count in our favour, with a supply chain geared to efficiency.

Given SA's high rate of unemployment it is worth noting that kiwifruit production is labour intensive, which strengthens a case for it to be explored from a policy perspective. While no formal research has been completed yet, our observations suggest job creation in kiwifruit could be similar to that of table grapes at about two full-time job equivalents per hectare planted. The major driver of the future growth of this industry will hinge on the ability to drive yield improvement and quality. We hope SA's kiwifruit industry can follow in the steps of its blueberry counterpart to drive more growth in agriculture.

Focusing on agriculture as one of the sectors to stimulate growth and job creation is the right approach, with a focus on exploring niche crops and fruit such as the kiwifruit, which might be a game changer in the agricultural sector.

Reprinted from the Business Day, 25 August 2021.

Property Practitioners Act: Obligations on property practitioners

By Justine Krige, Director in the Corporate & Commercial practice at Cliffe Dekker Hofmeyr (CDH)

WHAT has happened to the Property Practitioners Act, No 22 of 2019 (PPA)? The President has signed the Act into law, however, the date of commencement of the Act is still to be determined. The Act will repeal the Estate Agency Affairs Act, No 112 of 1976 ("EAA Act") in its entirety. Draft regulations were published for public comment in March 2020. However, as things stand, there is no firm indication as to when the PPA will come into force.

When the PPA comes into force, the Act will place a number of new obligations on property practitioners not all of which are contained in the EAA Act. So, what are the principal obligations of property practitioners under the PPA?

1. Mandatory display of a Fidelity Fund Certificate (FFC)

A holder of a FFC must: (i) prominently display his, her or its FFC in every place of business where he, she or it conducts property transactions, to enable consumers to easily inspect it; (ii) ensure that the prescribed sentence regarding holding a FFC is reproduced on any letterhead or marketing material; and (iii) in any agreement relating to property transactions, include a prescribed clause guaranteeing the validity of the certificate.

2. Maintaining a trust account

Every property practitioner must: (i) open and keep one or more separate trust account/s; (ii) appoint an auditor; (iii) provide the Property Practitioners Regulatory Authority (Authority) with all information as regards the trust account/s and auditor appointed; (iv) deposit all trust money in the relevant trust account; (v) keep separate accounting records in respect of the trust account/s and cause them to be audited.

3. Duty to keep accounting records and other documents

Every property practitioner must for a period of 5 years retain: (i) all documents exchanged with the Authority; (ii) all agreements, mandates and mandatory disclosure forms relating to financing, sale, purchase or lease of property; and (iii) any advertising or marketing material relating to the carrying on of business as a property practitioner.

4. Property practitioner not entitled to remuneration in certain circumstances

A property practitioner is not entitled to any remuneration unless the property practitioner and, if a company, every director of such company, is in possession of a FFC. A conveyancer may not pay any remuneration or other money to a property practitioner unless the property practitioner has provided the conveyancer with a certified copy of his, her or its FFC.

5. Maintaining mandatory indemnity insurance

The Minister may, for the purposes of providing redress in respect of the contravention of a code of conduct or other sanctionable conduct in terms of the PPA, prescribe indemnity insurance which a property practitioner must take out and maintain.

6. Complying with a code of conduct

Every property practitioner must comply with the prescribed code of conduct (still to be published by the Minister of Human Settlements).

7. Complying with Property Sector Transformation Charter Code

Every property practitioner must comply with the Property Sector Transformation Charter Code (still to be published).

8. Providing certain mandatory disclosures

To achieve the object of being a consumer-focused piece of legislation designed to protect consumers in the property industry, the PPA obliges property practitioners to deliver a "disclosure form" to a seller/lessor before concluding a mandate, and to a purchaser/lessee before making an offer. The disclosure form must be signed by all parties and attached to the sale or lease agreement. If no disclosure form is signed and attached, the PPA provides that the agreement must be interpreted as if no defects or deficiencies of the property were disclosed to the purchaser. A property practitioner cannot accept a mandate unless the seller or lessor has provided a fully completed and signed disclosure form.

9. Limitation on relationships with other property market service providers

Section 58(2) of the PPA outlaws any type of practice in which a practitioner provides a consumer with an incentive to use a particular conveyancer or service provider. This is probably one of the most debated sections of the PPA, with significant practical ramifications for the way property practitioners do business.

These obligations are clearly intended for the protection of consumers. Any property practitioner in contravention of the PPA will be required to repay any fees received for a property transaction and may be issued with a fine. Furthermore, any person convicted of an offence in terms of the PPA is liable to pay a fine, or to imprisonment for up to 10 years. Thus, even if property practitioners do not hold monies in trust, they will need to comply with the remaining obligations in terms of the PPA.

Property practitioners are advised to familiarise themselves with these requirements as they may shortly be brought into force and effect.

We can expect more emissions from oil refineries in the near-term future, analysis finds

By Cell Press

A global inventory has revealed that CO_2 emissions from oil refineries were 1.3 Gigatons (Gt) in 2018 and could be as large as 16.5 Gt from 2020 to 2030. Based on the results, the researchers recommend distinct mitigation strategies for refineries in different regions and age groups. The findings appear August 20 in the journal One Earth.

"This study provides a detailed picture of oil refining capacity and CO_2 emissions worldwide," says Dabo Guan of Tsinghua University, Beijing, China. "Understanding the past and future development trends of the oil refining industry is crucial for guiding regional and global emissions reduction."

Climate change is one of the most fundamental challenges facing humanity today, and continuous expansion of fossil-fuel-based energy infrastructure may be one of the key obstacles in achieving the Paris Agreement goals.

The oil refining industry plays a crucial role in both the energy supply chain and climate change. The petroleum oil refining industry is the third-largest stationary emitter of greenhouse gases in the world, contributing 6% of all industrial greenhouse gas emissions. In particular, CO_2 accounts for approximately 98% of greenhouse gases emitted by petroleum refineries.

In the new study, Guan and his collaborators developed a publicly available global inventory of CO_2 emissions from 1 056 oil refineries from 2000 to 2018. CO_2 emissions of the refinery industry were about 1.3 Gt in 2018.

If all existing and proposed refineries operate as usual, without the adoption of any low-carbon measures, they could emit up to 16.5Gt of CO_2 from 2020 to 2030. Based on the findings, the authors recommend mitigation strategies, such as improving refinery efficiency and upgrading heavy oil-processing technologies, which could potentially reduce global cumulative emissions by 10% from 2020 to 2030. The inventory will be updated and improved in the future as more and better data becomes available.

The study also showed that the average output of global oil refineries gradually increased from 2000 to 2018, in terms of barrels per day. But the results varied by refinery age group. Specifically, the average capacity of young refineries, which are mainly distributed in Asia-Pacific and the Middle East, increased significantly from 2000 to 2018, while the average capacity of refineries older than 19 years remained stable.

"Given the greater committed emissions brought about by the long remaining operating time of young refineries, there is an urgent need for these refineries to adopt low-carbon technologies to reduce their CO_2 emissions," Guan says.

"As for middle-aged and old refineries, improving operational efficiency, eliminating the backward capacity, and speeding up the upgrading of refining configuration are the key means to balance growing demand and reducing CO_2 emissions."

WSP and Golder integration takes shape

IN April 2021, WSP Global Inc. announced the acquisition of Golder, a global consulting firm with over 60-years of experience in providing earth sciences and environmental consulting services. The addition of Golder increases WSP's global workforce by 7 000 people and makes it the leading environmental consulting firm in the world with approximately 14 000 of 54 000 professionals now dedicated to accelerating the world's green transition. Mathieu du Plooy, Managing Director: WSP in Africa says: "This integration reinforces our position as a market leader within the environmental and mining services areas, as our combined skills, expertise and experience working in Africa are complimentary and will ensure that we remain the service provider of choice in the ESG space for our clients operating throughout Africa."

Through this integration Golder's Africa staff compliment of 177 will join WSP, boosting the local firm's ranks to near 530. Additionally, WSP in Africa has aligned its Earth & Environment business, which will be led by Ralph Heath, formerly the Managing Director of Golder Africa. "Forming this business unit enables us to elevate the depth of ESG experience and expertise that resides within the business. This will increase our ability to help our clients transition to a more sustainable and low-carbon future, while providing professional development opportunities for our employees and long-term value for our communities, clients and shareholders. For us, environmental consulting is not just another division, it's at the heart of our Future Ready vision," says du Plooy.

Though Golder's staff compliment bolsters WSP's capacity to service clients with environmental and sustainability consulting needs, the company also has opportunities available to join its team. "We are actively recruiting to further supplement our expertise in the African business," du Plooy points out, "offering exciting opportunities for environmental experts and engineers to develop their skills and grow their careers. Through access to impactful projects on the continent, as well as to local and international specialists with whom to share knowledge, we believe we offer the best opportunities to consult in ESG."

Salga's wage agreement is not good news for ratepayers

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

THE South African Municipal Workers 'Union (Samwu) the South African Local Government Association, and the South African Local Government Bargaining Council (SALGBC), have declared their pleasure with the outcome of wage talks that awarded everyone working in municipalities a 3.5% increase in salaries plus a few once-off cash awards as sweeteners.

The only dissenting voice came from the Independent Municipal Allied Workers 'Union (Imawu) presumably because it wanted more fruit from the magic money tree.

The negotiations to arrive at this wage agreement took more than six months. Those who will pay for it – the millions of ratepayers already paying through the nose to meet the demands of those lucky enough to be employed by municipalities - were not in attendance, and were largely ignored.

Their absence makes the entire way in which municipal wage and salary rates are arrived at bizarre, to say the least. It appears to take place without the input of economic realities. Instead it appears to be an exercise in deciding how best to raid the purses of those who make money in order to give it to those who don't.

This unreal situation brings the prospect of a rates revolt ever closer because, as night follows day, the inevitable result will be yet another increase in rates and service charges imposed on the productive section of the population – the home owners and the private business sector.

The system doesn't work.

Prediction for strongest growth in 14 years misleading

"The prediction that South Africa can expect the 'strongest growth in 14 years' this year is completely wrong and totally misleading as there is still at this stage no indication that the economy will grow at all this year," says Fanie Brink, an independent agricultural economist.

HE referred to the article "Sterkste groei in 14 jaar vir SA voorspel" which appeared on the website of Netwerk24 recently and said the only real indicator at this stage of a possible growth rate that can be expected for 2021 is the 2,7% with which the economy contracted in the first quarter of this year when compared to the first quarter of 2020. Not an increase of 4,6%, according to Statistics SA, when compared to the fourth quarter of 2020 which is totally wrong and misleading.

The growth rate of the first quarter was in fact only 1,15%, but Statistics SA believes that if the rate is multiplied by 4 (annualised as an annual rate) it will give a useful indication of the growth rate for 2021 if the economy would grow steadily every quarter this year.

"Nothing can be further away from the truth because the economy will not grow by an average of 1,15% in every quarter this year which will bring the annual rate to 4,6%. This has absolutely nothing to do with the calculation of the annual rate and nobody is interested in a 'usable growth rate' but in a growth rate that has been calculated correctly!"

"A quarterly growth rate compared to the same quarter of the previous year will be an annual rate in each case!"

Statistics SA also creates a second problem for itself by adjusting the seasonal differences between the quarters with a methodology that was obtained somewhere in Ireland that no one knows how it works and which seasonal differences are excluded from the initially wrong calculation method. The seasonal differences can also not be completely eliminated because they have to be reflected in the growth figures.

"If the same quarters (more or less the same seasons) were to be compared with each other, it would also not be necessary to adjust the growth figures for seasonal differences."

Statistics SA decided last year not to annualise the quarterly figures any longer but postponed it because they realised they would finally paint themselves into a corner if they continued with this calculation method because the annual growth rates would still be wrong and the annual growth rates would then be 4 times smaller than expected.

This wrong calculation by Statistics SA causes misleading indications for the government and the private sector as well as for foreign and local investors who have to make important decisions about alternative investment options.

The misleading information also casts oil on the fires of local asset managers and financial advisers who use it to advise people to invest more money in South Africa when in reality the economy is already finally collapsing and they will not themselves bear the risks.

The problem is exacerbated by the Reserve Bank, which believes that it can control almost the entire economy while there is absolutely no evidence for its claims that it can curb the inflation rate, protect the exchange rate or stimulate and create economic growth with its interest rate policy. .

"The economy will only grow again if the government and its social partners, the Reserve Bank, most economic and political commentators and the media would one day understand that economic growth is created from the supply and demand side of the economy and that the inflation and exchange rates are determined by the supply and demand in the economy and not by the single biggest delusion in economic science over interest rates of most central banks in the world," says Brink.

Global rig count shows exploration pressures

A snapshot of mineral exploration drill rig use in major mining regions globally has revealed Australia, the United States and parts of South America are nearing capacity, as the surge in exploration continues unabated.

The survey, by leading global mining-tech company IMDEX, provides a rare global overview of rig utilisation.

In a market update ahead of a presentation to the Macquarie Emerging Leaders Conference, IMDEX said rig utilisation in Australia was "nearing capacity" at 79 per cent, and 72 per cent in North America.

IMDEX Chief Executive Officer Paul House said the company was able to produce the snapshot because of its global presence in major mining regions.

Mr House said global rig utilisation had only just returned to or exceeded pre-COVID 19 levels.

The March snapshot showed rig utilisation was at 37 per cent in Europe, 38 per cent in South America, 30 per cent in Africa, and 55 per cent in Canada.

Activity in Canada would be significantly higher in the northern summer drilling season, Mr House said.

Some regions in South America were stronger than others, but overall there was room for growth.

In regions nearing capacity, delivery times for new rigs had increased and labour shortages were adding to the pressure.

"We believe the industry is willing to invest and spend but may not be able to move as fast as it would like,"

Mr House said.

"The industry drivers of depleted reserves, strong commodity pricing and the trend towards decarbonisation, are driving substantially increased industry exploration budgets.

"However, delivery against these targets will require time and investment in labour, drilling rigs, and other supply chain pressures that are a current constraint.

"When S+P says exploration will grow by 15 to 20 per cent in a year and we see that the areas that are most active are running at maximum rig utilisation, and we know the lead time for new rig orders has blown out to nine or 10 months, we believe that increase won't happen in that timeframe.

"A lack of rigs places even more importance on using the best technology to drill more metres with the rigs that are available."

Mr House said the long-term outlook for mining-tech was strong.

The snapshot comes as consultants BDO in its latest quarterly report said that ASX-listed exploration companies had raised $2.37 billion in the March 2021 quarter, up 7 per cent from the $2.21 billion in December.

BDO's Global Head of Natural Resources Sherif Andrawes said 81 per cent of companies had reported sufficient funds to support operations for more than two quarters.

"This may have negated the urgent need for explorers to raise funds in the March quarter, as companies turned their focus instead toward spending in the ground and investment," he said.

He said the figures showed a flood of funding toward battery minerals and clean energy companies.

"We know that the battery minerals industry has been hot in recent times but the dominance of lithium and other battery minerals companies this quarter has taken us by surprise," Mr Andrawes said.

Mr House said IMDEX's integrated product offering was commodity agnostic, ensuring it was in a good position to service the market.

WUL – DWS to address backlogs – reduce risk for independent power producers

By Laura Wilson of Cliffe Dekker Hofmeyr

THE misalignment between timing of environmental permit processing and project development has created challenges for independent power producers (IPPs) and the projects they develop, especially in attempting to meet bid criteria and the prescribed deadlines for Financial Close and Commercial Close.

In particular, water use licence (WUL) applications have been associated with extensive processing periods and unanticipated delays, largely attributable to the capacity constraints synonymous with the Department of Water and Sanitation (DWS). For companies bidding as IPPs in power procurement programmes such as the ongoing Bid Window 5 (BW5) of the Renewable Energy IPP Procurement Programme (REIPPPP), these timing concerns risk projects not meeting the requisite bidding criteria. The risk is further exacerbated by the moratorium the DWS has placed on processing WUL applications until preferred bidder status is awarded, which, together with timing delays, prolongs the wait for WULs to be granted. What this may encourage, however, is project developers' initiation of WUL application processes through the DWS' online application portal, E-WULAAS, and pre-application meetings well in advance of bid submission deadlines. The importance of doing so is now reflected in the REIPPPP BW5 request for proposals which requires that, as at bid submission date, the bidder must have proof that an integrated WUL application or WUL application has been made.

Together, early application submissions and the DWS' reduction of the WUL application process to 90 days from the previous 300-day period may alleviate the timing constraints characteristic of WUL applications. It is understood that the expedited process was applicable to applications as of April 2021, however, formal amendments to the regulations dealing with applications have not been finalised as yet. The finalisation of WUL applications within this shortened time period is subject to the DWS being provided with all the requisite administrative and technical information needed to enable the necessary screening and assessment of the application. This is part of a three-step process that is now catered for on the E-WULAAS portal, specifically: (i) a pre-application engagement meeting between the applicant and the DWS, following the compilation of a technical report by the applicant's specialist; (ii) the screening of the technical report by the DWS and the acceptance or rejection thereof; and (iii) the DWS' assessment of an accepted technical report.

From communications from the DWS it is understood that, together with the initiation of expedited processing timeframes, additional officials will be recruited to fast-track applications to address the historic capacity constraints of the department. These steps are vital in encouraging infrastructure development, and particularly for ensuring a level of alignment with the timeframes associated with the development of energy generation projects. Although it is still the case that WUL applications will not be processed by the DWS until projects participating in power procurement rounds are awarded preferred bidder status, the expedited timeframe will nonetheless assist in BW5 of REIPPPP, and future IPP procurement programmes, as pending WUL applications will be less likely to impact on Commercial Close, Financial Close or implementation of the projects.

With the BW5 REIPPPP bid submission date having just passed on 16 August 2021, it will be telling whether the DWS abides by the 90-day limit in processing the WUL applications of preferred bidders. The risk, however, remains on the bidders to ensure material consents such as a WUL are in place by Commercial Close and Financial Close.

Nurturing key construction expertise

BUILDING vital engineering and construction management skills for South Africa remains a priority for leading black-owned contractor Concor, despite the challenging environment for the construction sector.

The company's two-year Graduate Mentorship Programme – combined with its bursary scheme – continues to generate top-class professionals for the business and the broader sector, says Concor's training manager Shannyn Karshagen.

"The interns that enter our programme this year will have all received financial support from Concor for their university studies," says Karshagen. "In line with our transformation philosophy, these are almost all black individuals, and we have also attracted a good percentage of young women."

She explains that many graduates from this programme have gone on to hold senior roles in the organisation, developing from positions such as site engineers to site agents and contracts managers. The disciplines in which they practice are mainly civil engineering, quantity surveying, and construction management.

"While the numbers in the programme are obviously affected by conditions in the economy and sector, Concor has prioritised the need to nurture the skills and ambitions of young South Africans," she says. "The country's construction industry will always be a foundation of our national development, so we must ensure a critical mass of these skills."

This year's cohort includes civil engineers, graduates in construction management, a mining engineer, a quantity surveyor and a land surveyor. The Concor Graduate Mentorship Programme feeds both its construction platform and its mining platform.

"Young graduates bring not only their important theoretical training to the business, but also their new ideas and fresh approaches," she says. "This contributes to Concor's strategic commitment to agility, which we believe is key to survival in the modern, fast-changing economic world."

The Graduate Mentorship Programme, which has overseen the entry of almost 100 young professionals into Concor's ranks over the past 12 years, also introduces them into the company's Women in Leadership programme and its Future Leaders Forum.

"This focused skills development and mentoring process has become a backbone of Concor's technical and management expertise," says Karshagen. "Recovery in the sector will allow us to offer more opportunities to South African youth."

The programme begins with an intensive three-week induction in project management, leadership, and health and safety, before the interns are allocated project sites where they can apply their training with the assistance of coaches and mentors. Regular formal training during the two year period includes a course with the Gordon Institute of Business Science (GIBS), while graduates are also assisted in preparing for professional registration.

She notes that young entrants tend to embrace technology and virtual learning more easily, and this has helped graduates to withstand the disruption of the Covid-19 pandemic. With university examinations and terms being extended due to Covid-19, this year's programme has been delayed and started formally in July.

Ore volume measurement accuracy improves by 50%

RICHARDS Bay Minerals required a solution that accurately measured mass flow of product on a conveyor belt with high precision and repeatability. It also had to be less maintenance intensive than conventional conveyor belt scales. The KwaZulu-Natal-based mining house selected the Bulkscan volume flowmeter from SICK, which was installed without removing the existing belt scales so the customer could compare measurement accuracy and ease of use.

Initially installed for a proof-of-concept (POC) trial at RBM's Mining Pond Echo Plant in Q2 2020, belt cut samples proved the sensor's increased measurement accuracy by approximately 50% compared to belt scales. This was determined by an independent laboratory using a belt cut sample from the plant's dry mining unit, where Bulkscan is installed. The increased measurement accuracy for its targeted minerals of titanium, iron ore and ilmenite, prompted RBM to not only purchase the test unit in 2021, but order an additional four.

"Using non-contact time-of-flight technology, the sensor generates a reliable volume flow signal based on the laser's time of flight and belt speed," explains Stephen Eltze, Marketing Product Manager, SICK South Africa. "Product volume is measured using multi-echo technology while speed is measured with a wheel encoder or SPEETEC from SICK and, ultimately, mass flow is determined by using a fixed density of the conveyed product. Bulkscan also provides a rather fast ROI, which is proven by the extent of the increased measurement accuracy."

"Non-contact volume and mass flow measurement for solid and bulk products on conveyors will benefit all industries," points out Ajanth Sewpersad, Process Automation Sales Engineer, SICK South Africa. "Bulkscan is unique in that it can be used across industries, from food production to, for example, measuring clinker in the cement industry and all mined minerals. Its versatility makes it capable of accurately measuring product volume flow of any bulk product transported on a conveying belt system."

SICK provided the Bulkscan hardware, all mounting accessories and cables, while RBM's systems integrator conducted installation. RBM technicians commissioned the scanner themselves, with SICK paying a courtesy follow-up visit to ensure all functions operated to spec. "Plant personnel had already experimented with the device and become familiar with its operability several months prior to installation," says Eltze. "Their proficiency with the scanner enabled them to easily oversee installation and integration, and commission the device themselves."

Device simplicity, ease of installation, ease of use, high levels of accuracy and repeatability, means Bulkscan can help improve the bottom-line of any conveying plant. It seems the time-of-flight and multi-echo combination technology is set to replace conventional belt scales in the foreseeable future.

SAICE - promoting a diverse and inclusive industry for future leaders

ENCOURAGING the development of a workforce, which is inclusive and diverse was the key message from the South African Institution of Civil Engineering (SAICE) during a recent webinar held in association with the SAICE Young Members Panel (YMP).

Innocentia Mahlangu Pr.Eng, SAICE Champion of Diversity and Inclusivity and Project Manager at Hatch, started the event by presenting on SAICE's diversity and inclusivity (D&I) initiatives, which form a vital part of their strategy. "We need to drive change in our industry and establish a working environment which is inviting to everyone. It has been said that diversity is being invited to the party and inclusivity is being asked to dance. We need to build a civil engineering industry which is inclusive regardless of race, gender, religion, culture or disability."

Chair of the SAICE YMP, Michael Mhlanga added: "Young professionals have a massive role to play as future leaders and advocates for change. We need to move D&I from theory to practice." He said this can be achieved by engagements with young people at school and university level. "The YMP is proud to be running various initiatives of this sort, where our young engineers and connecting with our youth. These students are receptive to us, as they see that we are like them – young, with exciting careers ahead of us."

Malani Padayachee-Saman Pr.Eng, CEO of MPAMOT, said that from the gender perspective of D&I, it is important to not just focus on women in the industry. "We need to focus on wider gender mainstreaming, where we are not just focussing on including women in technical fields, but encouraging general 'role reversal' in the workplace and in the home. The role of men must also be considered," she said. She also unpacked the role of ethnicity and religion in the workplace.

The programme manager for the event was Tsebo Koena, Civil Technician for Zutari. In conversation with Kim Timm Pr.Eng, Executive Structural Engineer at AECOM, he asked her what it takes for young people to get ahead in the industry. "From a women's perspective, there is immense pressure to be 'strong' all the time. You get put in a situation where you are loaded with more responsibilities and expected to succeed – and I don't think that's always fair. We should rather be looking at knowing your own strengths and weaknesses, develop confidence, and then building competencies. Then you become much harder to be overlooked," answered Timm.

Mahlangu added that diversity and inclusivity is a journey. "Undoing so much historic imbalance is a massive task. SAICE wants to encourage equality and fairness – and raise awareness of unconscious bias. People are so unaware of the perceptions they hold, and how this impacts their actions." Unconscious biases are social stereotypes about certain groups of people that individuals form without being aware of it. Everyone holds unconscious beliefs about various social and identity groups, and these biases often inhibit inclusive behaviour.

Koena concluded by saying that it is important to recognise that civil engineering professionals play an important role in society. "We are building a world for people and collaborating with each other. As civil engineering professionals, we are building society and it is important to be inclusive as we move forward."

SA experienced a $2 billion decrease in foreign investment in 2020

BUSINESSES and entrepreneurs alike understand that the best investment opportunities are not always in their home country, so they pursue worthwhile investments in foreign countries. Known as inward foreign direct investment (FDI), it can significantly boost the economic prospects of a recipient country.

Interested in economic prosperity, MoneyTransfers.com analysed the latest data from the 'Organisation for Economic Co-operation and Development (OECD)' to establish which countries in the world benefited the most and least from inward FDI in 2020.

Analysis of the Results from the Research:

MoneyTransfers.com found that China was the largest beneficiary of inward FDI in the world last year (2020) at a colossal $212.5 billion. A 14% increase from the year before (2019), where FDI inflows into the country equated to $187.2 billion.

In second place is the United States who were the second biggest recipients of inward FDI in 2020 at $177.1 billion. Despite such a hefty sum, it represented a 37% fall in FDI inflows in contrast to 2019, when accumulative inward FDI was $282.1 billion.

Luxembourg is the highest-ranking European country in fourth place. In 2020, Luxembourg's economy benefited from an injection of $62 billion from inward FDI. From all the countries analysed in the research, Luxembourg experienced the greatest year-on-year increase (319%) in FDI inflows, $47.2 billion more was generated from inward FDI last year when contrasting 2019 figures against 2020 figures.

India ($64.4 billion), Germany ($35.6 billion) and Ireland ($33.3 billion) are among the other countries which gained more than $3 billion each from inward FDI in 2020, respectively ranking third, fifth and sixth.

South Africa is in joint 28th position, as inward FDI in the country was a sizeable $3.1 billion in 2020. This also meant that FDI inflows in South Africa fell by 39% when compared to the collective $5.1 billion inward FDI that was made in 2019.

Given the worldwide turbulence and economic uncertainty the Covid-19 pandemic caused last year, businesses and entrepreneurs alike were perhaps much more hesitant than ever before about investing outside of their domestic borders.

New traction transformers for rail networks

One of the eight WEG 6MVA traction transformers.

ZEST WEG is to supply specialised traction transformers for new substations serving rail lines in Gauteng and the Western Cape.

According to Dillon Govender, sector specialist – public sector business development at Zest WEG, work on the eight transformers ordered is currently underway, for delivery by the end of October 2021. The company is supplying six 6MVA units that will step down from 88kV to 1 220V, and two more 6MVA units stepping down from 44kV to 1 220V. All the transformers will feature a dual output, as well as tertiary windings for small power applications like lighting in the area.

"This is part of an important fast track project, and the order follows a number of successful deliveries of these complex transformers by Zest WEG over the years," says Govender. "The units are designed to customer specifications and manufactured in line with global standards."

Through its workshop facilities in Gauteng, Zest WEG has become well known as a 100% local manufacturer of power, distribution and traction transformers for customers within South Africa, and has supplied well beyond the borders.

"We have established considerable local capacity in transformer manufacture, reflected in the growing confidence of customers in our design and production capabilities," he says. "We are also able to leverage the value of being part of the WEG Group by drawing on the skills of experts from our Brazilian facilities."

This allows Zest WEG to constantly upgrade local skills through training and skill sharing by specialist engineers and technicians, whenever necessary. This corporate relationship has also allowed the company to broaden its local offerings, at the same time as creating jobs and upskilling local employees.

"Zest WEG's depth of expertise means that we can also conduct design work locally, to meet the specific requirements of customers," he says. "Our strong local footprint includes offering the necessary service support to customers, ensuring that we can provide the necessary backup for all our equipment."

AIIM announces completion of six solar PV projects

AIIM recently celebrated the achievement of Commercial Operation of the last of six solar PV projects awarded under Round 4 of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP). The Projects, situated in the Northern Cape and North West Provinces, form part of a broader portfolio of renewable assets managed by EIMS Africa.

EIMS Africa is owned by the IDEAS Fund, an AIIM managed fund, and constitutes one of the largest South African owned renewable energy portfolios in the market and is expected to exceed 1GW of generation capacity by the end of the year.

EIMS Africa was established as an integrated renewable energy company to manage Renewable Energy Assets that are majority owned by AIIM managed funds. Vuyo Ntoi, Joint Managing Director of AIIM, explained "This is an excellent achievement in difficult circumstances, and was down to the success of a committed team of professionals, proving the worth of this integrated management approach to delivering and managing these assets."

With nine existing projects under management and further projects in the pipeline, this platform is positioned for growth and is expected to play a leading role in the growth of the African renewable energy sector. Sean Friend, Portfolio Manager of the IDEAS Fund, explained, "We are pleased to have in place a core team of experts managing a sizeable portfolio of renewable energy investments. We have great plans to grow the business in terms of number of projects and their geographic location and look forward to working with Ryan and his team to make this a reality."

Ryan Hammond, EIMS Africa CEO, commented "I'm extremely proud of the entire team for this achievement, many of whom have been involved with our earlier projects, since 2011. This milestone marks the end of a three year plan that included restructuring the management of existing and new projects, more than doubling the size of our team, while continuing to deliver better than expected results for our shareholders and social partners in the midst of the COVID pandemic. With this great foundation in place the EIMS Africa team is looking forward to an exciting few years ahead as we grow the Platform".

Tool backpack for maintenance professionals

IT can be very inefficient, not to mention frustrating, for maintenance professionals to have to go back and forth to the office stores, getting additional tools because one can't carry everything needed on-site. COMTEST is offering the Fluke Pack30 Professional Tool Backpack that makes it easy to organize, transport, and access all the tools needed for the day. Designed specifically for an electrician; DMMs, clamps, tools, and accessories, the rugged backpack also protects tools even in the dirtiest of work sites. For digital users, the Fluke Pack30 offers a way to carry all the necessary tools while keeping "hands-free" to use cell phones and tablets.

The Fluke Pack30 features:

- More than 30 pockets and pouches designed to hold a broad array of Fluke tools and accessories, as well as screwdrivers, pliers, tape rolls, and other hand tools;
- Six main storage compartments for convenient organization;
- A special pocket for tablets and laptops 12 inches (30 cm) wide or smaller;
- Storage for safety glasses, earplugs, cell phones, valuables, and more;
- Rugged, waterproof molded bottom to protect tools and accessories from the elements;
- Molded base also holds backpack upright, keeping tools organized and within easy reach.

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

International study verifies energy savings potential of Standards and Labelling Programmes – and SA is on track

THE International Energy Agency (IEA) and 4E Technology Collaboration Programme (4E TCP) have released a report on the effectiveness of Energy Efficiency Standards and Labelling (EES&L) programmes. Labelling electrical equipment such as, among others, residential appliances, electric motors, street lighting, etc. according to their energy performance helps consumers to make informed purchasing decisions, saving them billions of dollars on electricity and avoiding more than 300 million tons of CO_2 emissions each year. The South African National Energy Development Institute (SANEDI) reports that this international study has strengthened local EES&L programmes, through knowledge gained towards implementation, which are seeing success in South Africa in line with international findings.

The IEA report draws on nearly 400 documents and shows that the longest running EES&L programmes have saved approximately 15% of their country's total electricity consumption. Around two-thirds of these savings are seen in the residential sector, while savings in the services and industrial sectors each account for one-sixth.

SA on track for improving residential energy intensity

The country's existing National Energy Efficiency Strategy (first published in 2005) included a target to improve residential energy intensity by 10% in 2015 compared to a year 2000 baseline. The mechanisms predicted for achieving this target included S&L of household appliances. Regulations requiring minimum energy performance standards and consumer labels for large residential appliances (including laundry, refrigerators, AC, and geysers) were introduced in 2015.

Barry Bredenkamp, General Manager: Energy Efficiency & Corporate Communications, SANEDI, says "research undertaken in 2019 concluded that our local S&L programme will reduce electricity consumption by 7,1 TWh by 2030, reducing residential utility bills in total by US$1.4 billion – $54 per household. The IEA report reinforces how effective these programmes are. These reductions bring benefits to consumers as well as lower emissions and lower energy demand."

The report's findings are drawn from evaluation studies covering 100 countries, including those with the longest running and strongest appliance policies, such as China, the EU, Japan, and US. It confirms that well-designed policies encourage product innovation and lead to economies of scale, which reduces the cost of appliances even without accounting for the efficiency gains or reducing the size or service of the appliance.

"Notably, South Africa is mentioned in this report. This is encouraging, given that we are the world's 14th largest global emitter of greenhouse gases, because we rely on coal for energy generation," says Ashanti Mogosetsi, Project Manager, EES&L Programme for SANEDI.

"These programmes provide net financial benefits to individuals and the community. Other benefits include employment, product innovation, water savings, improvements in air quality and the reduction of public expenditure on health care, add to the case for stronger and more widely implemented standards and labels.

"Regular updates of EES&L policies are required to keep them in line with technological improvements, and to drive innovation in energy efficiency. This demands due diligence, such as industry consultation, and SANEDI is eager to participate in this process. To this end, South Africa has the started the process for S&L to be introduced to streetlights, electric motors and televisions; cost benefit analyses are at an advanced stage to prove this can work in the country" says Bredenkamp.

New energy amendments open up new markets for IPP's

THE amendment to schedule 2 of South Africa's Electricity Regulation Act, which was recently gazetted, raises the threshold for self- or distributed-generation power plants from 1 to 100MW.

The change will allow private companies to construct power plants with generation capacities of up to 100 MW for commercial use, as well as embedded generation plants (which are connected to the national power grid), without requiring a power generation license from the regulator, NERSA, although various other connection and trading approvals may still be required.

Jan Fourie, General Manager at renewable energy firm Scatec sheds light on what these changes mean for the power sector, the economy and the nation as a whole: "These amendments to legislation are a natural and logical extension to Eskom's unbundling and deregulation strategy," he explains, "and will potentially open up whole new markets for power generation and trading."

Whereas onerous licensing requirements have inhibited widespread uptake of independently generated power (and, by extension, renewable energy) until now, experts now foresee myriad knock-on benefits arising from this significant policy revision.

The lessened administrative burden will attract more investment into the sector; new large private power plants mean greater energy security and alleviation of load-shedding; and the prospect of continuous vibrant economic activity in an industry traditionally staggered by the timing of government plans and bidding schedules could herald smooth growth and substantial job creation.

"The amendments will now allow privately generated power to be transmitted across the national grid to company facilities in a willing-buyer willing-seller model, known as 'wheeling'. This will also facilitate power transmission from sites with good wind and solar resource to businesses whose locations are not conducive to cost competitive renewable energy production. Larger plants could potentially sell energy to several separate customers based on their electricity needs. Independently produced power therefore builds companies' resilience by guarding against load shedding and allowing them to predict their operating costs and thereby plan more effectively," Fourie says.

This model is a common practice globally, but while SA's grid code allows for it, wheeling has so far only happened on a small scale, for example at the Bio2Watt biomass plant which supplies power to BMW's Rosslyn plant.

"Unlike in other markets abroad, where an IPP's excess capacity can be sold back into the national grid, here the onus to find a power purchaser will rest with the IPPs," Fourie clarifies.

He explains that the threshold increase will also stimulate an entirely new market for power trading in which actors will position themselves as brokers, linking private generators with customers, as we've seen happening in places like Europe.

The SA connection management interface (C&I) space, which is already thriving on a small scale, can now look forward to the prevalence of much larger deals. While the infrastructure for it is already in place in SA, the regulatory frameworks for wheeling are still being set into law.

"Energy firms like Scatec are eager to study the exact phrasing of these new amendments to the Act before making any assumptions," he says.

"The skills and knowledge we've acquired through working with Eskom, in the REIPPP program, are directly applicable to this new world of private generation, and over the years we've gained a deep understanding of the country's geography, social context, as well as its regulatory and land-permitting systems," says Fourie.

Whether power is used for government programmes like the REIPPPP, or via a wheeling arrangement for industrial, corporate, or mining clients has little impact on the IPP's operation.

"We are able to wheel energy to our customers from a variety of solar- and wind-power sites which we're continuously developing for REIPPPP, and for general commercial use. Alternatively, where clients want to build 'behind the meter' power projects on their own land, we are able to assist with NEMA (National Environmental Management Act) compliance and related environmental planning legislation, thereby alleviating the load of complex administration, allowing organisations to focus on their core business," says Fourie.

He notes that the increased threshold will result in jobs and skills and in investment into renewable energy in the country, allowing large utility-scale plants to be developed for private-sector use.

"These will tend to be 'bricks-and-mortar investments, which is great for SA as they'll bring in wealth in the form of infrastructure which remains in the country," he concludes.

New industrial alternator claims increased performance and an optimized cooling system

The LSA 47.3 offers increased efficiency and starting kVA over its predecessor, and also benefits from the implementation of the latest technologies developed by Nidec Leroy-Somer.

THE LSA 47.3 delivers a rated power between 410 and 660 kVA at 50 Hz (495 to 825 kVA at 60 Hz). The 660 kVA rating (825 kVA at 60 Hz) was previously held by the LSA 49.3. Thanks to the cooling circuit optimization, the LSA 47.3 is now able to reach this power node for prime and demanding application. This is a significant benefit for generator set manufacturers as the same power is made available through a more compact machine.

The LSA 47.3 alternator features a SHUNT excitation system with a R250 regulator as standard. An AREP auxiliary winding excitation system with D350 digital regulator version is also available to improve transient performances and provide high overload capacities. A D550 digital regulator can also be used for grid connected applications. A Permanent Magnet Generator (PMG) excitation system is also available as an option.

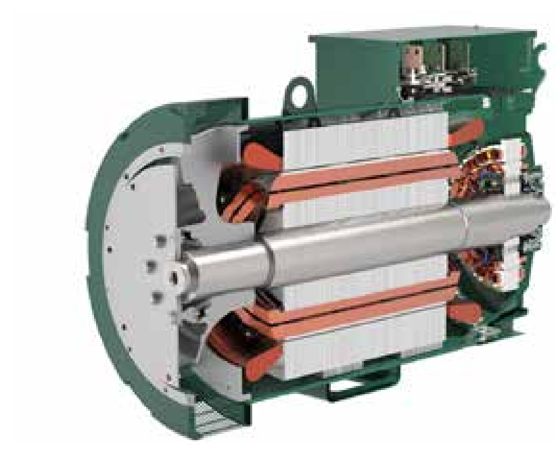
The LSA 47.3 is fully interchangeable with the LSA 47.2 (shaft height and feet configuration), and can therefore be coupled with all diesel engines on the market for this power range.

The LSA 47.3 offers the following power nodes:

- 410, 455, 500, 550, 600, 660 kVA at 50Hz
- 510, 570, 625, 690, 750, 825 kVA at 60Hz

This alternator is optimized for prime and demanding applications such as marine and cogeneration. It offers an efficiency of up to 95.7% at cos φ 0.8, which ranks it among the best in the category.

"The LSA 47.3 is an important step forward in our strategy to optimize our product range," said Wenbin Ding, low voltage range product manager "The benefits of this new product are significate, with real improvements where it matters most: efficiency, power and starting kVA. In addition, the optimized cooling system we implemented means that hot spots are reduced inside the machine. Ultimately this means a better reliability and longer lifetime, which is essential for the applications all LSA alternators are built to support."



Cut away of the LSA 47.3.

With the LSA 47.3 introduction, the LSA 47.2 will soon be retired from the market, as well as the LSA 49.3 S4 (660 kVA).

Kit for temperature and outlet testing

KLEIN Tools introduces the Infrared Thermometer with GFCI Receptacle Tester for use by professionals to help identify potential problems based on temperature and by testing standard and GFCI receptacles.

Infrared Digital Thermometer with Targeting Laser, 10:1: Optical resolution (distance-to-spot) of 10:1; Features include: targeting laser, automatic hold; backlit display; low battery, auto power-off; Measurement range is 20 to 400°C; Fixed emissivity at 0.95; Include custom pouch and a 9V battery; Built to withstand a 2m drop; Not a medical device; thermometer is NOT intended for use on people or animals.

GFCI Outlet Tester: Detects the most common wiring problems in standard and GFCI receptacles; Works on GFCI outlets and confirms operation of the ground fault protective devices; Nominal Voltage: 110/125V AC at 50/60Hz in 3-wire outlet; Built to withstand a 2 m drop.

"Klein's new IR1KIT provides an affordable alternative for temperature and outlet testing," says Sabrina Kalsi, product manager at Klein Tools.

"The IR1KIT brings together the IR1 and the RT210, two of Klein's best-selling tools that make sense to use together. The IR1 infrared thermometer measures surface temperature, providing quick and easy identification of hot sports and temperatures in hard-to-reach areas, while the RT210 provides easy testing of standard and GFCI receptacles."

For more information, visit www.kleintools.com/new-products.

Marvellous manta.

Manta rays inspire new device to filter wastewater microplastics

WASTEWATER treatment plants release microplastics into the environment, where they accumulate and pose a threat to humans and wildlife. These tiny plastic pieces don't get treated in wastewater treatment because they're not equipped for that size particle. Manta rays, in contrast, are good at filtering at such a scale.

By studying the way a manta ray feeds on plankton, scientists in the US have designed a filtration system that captures the tiny fragments without getting clogged.

Understanding how the manta ray is feeding could lead to filters for human use, relying on this method.

The car-size, kite-shaped fishes filter their plankton food from seawater, but they don't pause, close their mouths and snort clogs from their filters nearly as often as you would expect, according to Misty Paig-Tran, a marine biologist and a professor at California State University, Fullerton. If their filters work like sieves, then they must get clogged over time, like all similar systems, from vacuum cleaners to your water-filter jug.

Dr. Paig-Tran hopes that this discovery will aid in the battle against microplastics in the ocean.

Imagine a clog-resistant filter modelled on the manta's mouth and placed in a treatment plant to catch plastic fragments before they are released into the environment. To Dr. Paig-Tran, that seems like an intriguing potential use for the system she and her colleagues have described.

To understand how the manta's filters work, imagine a series of tiny angled slats lined up in its mouth. When seawater rushes over these structures, according to experiments by Raj Divi, a student in Dr. Paig-Tran's lab, it forms whirlpools between each pair of slats. These vortices don't suck particles down. Instead they push up, keeping the fragments of plankton and other seaborne particles from falling into the crevices.

As a result the particles ricochet off the slats, accumulating in the mouth while the water drains away, and then are swallowed by the ray. Scientists built a model of the angled slats that help manta rays filter as they feed and both lab experiments washing coloured dye and particles over plastic versions of the structures, and mathematical models confirm the effectiveness of the previously unknown process.

This is not the first time that researchers have found that filter feeders are probably not simply sieving. According to one study looking at this question in whales, water may rush across the front and back of the giant mammals' baleens at different speeds, causing a pressure difference that allows plankton to build up on the interior of the mouth. But other marine creatures do seem to be sieving, such as the basking shark, which sometimes closes its mouth and clears clogs in its filters with a kind of cough.

Article compiled from original articles that appeared in https://www.bbc.com/news/av/science-environment-58573451 and https://www.nytimes.com/2018/09/26/science/manta-ray-filters.html

Underground jib crane will recover spilled ore

CONDRA has designed and manufactured a very large jib crane for bulk recovery underground of ore spilled at an unnamed mine.

Recently delivered, the 5-ton crane has a lifting height of 9 metres, a slewing radius of 5 metres, and is equipped with an orange-peel grab and electromagnet combination that allows bulk ore to be gathered, lifted and positioned while simultaneously separating out the iron ore within it by means of the electromagnet.

After installation and commissioning at surface level for trials, the crane will play a key role in a prototype ore recovery process. Permanent installation underground will take place after six months of tests.

The mine's surface-level prototype solution comprises five different types of machines working together.

Ore spilled along the conveyor lines will first be recovered by small articulated loaders which will place it on dump trucks for depositing in a purpose-built pit. The jib crane will then retrieve the ore from the pit by means of a combined grabbing, magnetising, lifting, slewing and travel functionality, depositing the ore into a feed hopper from where a secondary conveyor belt will transport it to re-join the main ore stream on its way to the crushing plant.

The Condra jib crane is the key to this solution, and has been designed and built to withstand a harsh underground working environment with minimal maintenance. It comprises a pillar-supported double-girder beam topped by the crab-mounted hoist, an arrangement that maximises the grab's lifting height and optimises productivity in the execution of a repetitive but complex lifting task within the spilled ore recovery process.

The crab itself is jam-packed with equipment, holding not only the 5-ton variable-speed-drive hoist, but also the hydraulic power pack, two hydraulic hose reels serving the opening and closing functions of the orange-peel grab, and the cable-reeling drum serving the electromagnet.

Slewing action is delivered by power from three swivel drives, and limited by rotary limit switches defining and limiting travel extremities.

The crane's lift, swivel and crab movements, and all hydraulic grab and release functions, can be operated by either remote control or back-up pendant.

Condra's managing director Marc Kleiner said that that the large size of the machine and the complex task of designing it to achieve optimal productivity, had excluded most crane manufacturers from competing for the contract.

"The jib crane market is very competitive at its entry level or small-machine end, and we do not actively compete in that segment," he said. "But as crane size and complexity increases, Condra becomes difficult to beat in terms of engineering and design expertise.

"We have worked hard over many years to achieve an ability to align with both end-users and multiple third-party suppliers to deliver the required solution," he added.

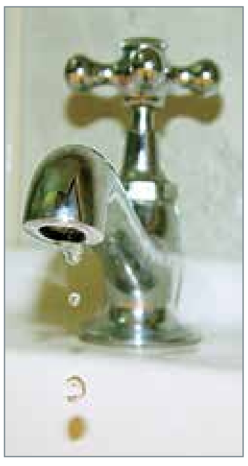
Principal co-suppliers for Condra's ore recovery crane were Rec-O-Quip, which designed the overall multiple-machine concept process, and MMH Recycling Systems which supplied the five-tine hydraulic grab.

Asked about Condra's future plans for the jib crane market, Kleiner said that increasing manufacturing efficiencies within the production process for this type of crane would make the company more competitive in bids for smaller, standardised designs.

"These efficiencies will also reinforce Condra's position as the manufacturer of choice for large jib cranes such as the machine just completed," he said.

For more information visit Condra's website: www.condra.co.za

Profit taps opening for Rextru?



SALT RIVER-based Rex Trueform's transformation from a fashion retailer into a more diversified investment company is progressing slowly.

The group's Queenspark fashion chain still dominates the revenue and profit lines - overshadowing the ventures into property development, water infrastructure and, more recently, specialist media/broadcast company Telemedia. But in its last set of interim results to end December 2020 RexTru's investment in water appears to have turned on the cash flow taps.

The group reported that its water infrastructure interests chipped in a R2.4 million profits to after tax earnings - including equity accounted earnings of R1.2 million from an associate company. In brief commentary, RexTru chairman and major shareholder Marcel Golding said the underlying subsidiaries in water were "profitable and cash generative".

RexTru made a rather intricate dive into the business of water several years ago. The investment in water infrastructure is through its subsidiary, Ombrecorp Trading (RF), and includes operational assets like SA Waterworks (SAWW).

Golding said Ombrecorp's water assets were performing and were successful working examples of private-public partnerships within the water and sanitation sector.

He pointed out that South Africa is classified as a water-stressed country and cannot afford a water crisis. "It is therefore of utmost importance that water security is ensured across the country. SAWW, with its skills and experience, is ready to play a key role in meeting this objective in the sector."

RexTru should be releasing its full year results shortly, and it will be interesting to see of the water assets have generated additional profits in the second half.

At last count these assets were valued by RexTru at R162 million - which suggests the profit taps need to open further to justify that valuation.

That said Ombrecorp did provide loan funding to SAWW with loan repayments linked to dividends. Ombrecorp has two representatives on the board of SAWW, and RexTru indicated that the performance of these operations was monitored against expected targets.

Dependable performance from local knife valves

BMG and Abrasive Flow Solutions (AFS) – part of the Engineering Solutions Group (ESG) of Invicta Holdings Limited – play a major role in the local valves sector, through the design, distribution, supply and support of a broad range of slurry related valves.

Included in this range of FPV and KLEP valves are slurry knife gate valves, which are manufactured by AFS and distributed throughout Africa by BMG. The AFS manufacturing plant in Benoni is equipped with advanced equipment and is supported by specialists who offer technical support, to ensure optimum safety, efficiency and extended service life of every system.

"BMG's Fluid Technology Low Pressure division works closely with AFS specialists to further improve the quality of knife gate valves, by lengthening their service life and reducing maintenance requirements. These objectives are being achieved through the latest developments in design technologies, advanced materials and durable coatings," states Willie Lamprecht, BMG's Business Unit Manager, Fluid Technology Low Pressure division. "Our highly-skilled teams have a thorough understanding of the processes where valves are installed and are able to specify the correct valves required for every application. We also assist customers in solving the problems of difficult installations and applications.

The BMG knife gate valves range is particularly well-suited for use in harsh conditions in diverse industries, including mining, chemical and petrochemical, water and wastewater, energy production and agri-food industries.

FPV Urethane-lined high pressure slurry knife gate valves are designed for full on/off applications. The Urethane is molded throughout the body and chest area, while the lining is flush with the bottom of the valve, eliminating any pocket where material can collect. These valves have a pressure rating up to 25 bar and can withstand operation at temperatures between -50°C and +80°C. Sleeve materials include gum rubber, high temperature EPDM, neoprene, nitrile and butyl.

FPV wafer slurry knife gate valves are designed as a space saving option for slurry applications. The full port design allows the gate to be fully isolated by the sleeve in the open position. When the valve is closed, the gate pushes between the sleeves, ensuring a 100% bi-directional bubble-tight seal, with no downstream leakage. Notable features of this lightweight valve include a narrow body, long-wearing replaceable sleeves and a high-strength Stainless Steel blade.

The FPV flanged slurry knife gate valve - a bi-directional gate valve, with long-wearing, field-replaceable rubber sleeves – is designed to withstand the harsh abrasive duty in mining and milling applications. Isolation is provided by the gate passing through the sleeves and expelling any solids that could clog or jam the blade, through the bottom of the valve housing. The fluoro-carbon coated Stainless Steel gate is designed to reduce friction of these lightweight valves. These valves a have a pressure rating up to 21 bar.

Notable features of this series include bi-directional operation at 51 bar, a double seat design and rubber sleeves that rely on the pressure between the sleeves to seal and provide a 100% bubble-tight shut off. These rubber seals, with an internal stiffening ring, are easily replaced in the field, prolonging valve working life.

BMG's wafer lug knife gate valves, with a narrow body, have been designed as a space-saving option in corrosive applications. The resilient seat is an elastomer sleeve that supports and guides the gate, ensuring full tightness when closed. The body and seat are designed to ensure a non-clogging shut-off/on of suspended solids. These valves, which can be manufactured with replaceable sleeves, are used in either bi-directional or dead-end service. All types of actuators can be fitted, including electric, gearbox, hydraulic, pneumatic and hand wheel units.

For further information contact Willie Lamprecht, Mobile: +27 72 326 4832 Tel: +27 11 620 1581 Email: williaml@bmgworld.net

Water and sanitation solution overcomes social challenges

WEC Projects has been chosen by the Water Research Commission (WRC) under its SASTEP programme as an industrial manufacturing partner to test the new sanitation system, called NEWgenerator, with an intention of commercialisation of the technology and roll out throughout South Africa. Says Gunter Rencken, Technical Director for WEC Projects, "This is a particularly exciting system that we predict will help address a number of critical social challenges facing the country including sanitation, access to water, energy independence and improved food production."

A large number of South Africa's rural and informal communities lack proper infrastructure for water, sanitation and other critical services, relying instead on outdated and unsuitable solutions such as pit or portable toilets. The NEWgenerator has been designed to bring proper sewage treatment and more to communities. It is a compact, portable and modular sewage treatment technology which incorporates an anaerobic digester that uses microbes to breakdown human waste while producing biogas. Clean water is filtered out, with bacteria, viruses and any remaining solid particles removed, and then disinfected through a chlorination system. 99% of the water can be recycled for reuse in the sanitation platform, reducing its reliance on the local water supply. The nutrient-rich treated water is an ideal crop fertiliser for use by local small-scale and informal farmers and the biogas produced can be utilised for domestic purposes such as cooking and heating.

Daniel Yeh and the USF team.

Water treatment without grid power

Says Rencken, "A unique feature of NEWgenerator is that it can run independently of the power grid, using solar power to operate or it can be hooked up to a generator. This makes it particularly suitable for use in South Africa where the country's unreliable power grid, prone to loadshedding and unscheduled outages, has had an adverse effect on existing infrastructure and equipment, often leaving even developed urban areas without power or access to water for prolonged periods."

NEWgenerator is the brainchild of USF Professor of Civil and Environmental Engineering, Daniel Yeh, and his research team. With a $2 million grant from the Bill and Melinda Gates Foundation through its Reinvent the Toilet Challenge, Yeh has led a team from the university in the design of the system. They initiated development and testing in India before setting their sights on South Africa, working with University of KwaZulu Natal (UKZN) to test its effectiveness on a pilot scale in the eThekwini area.

WEC Projects was approached by the WRC to help commercialise the system using funds from the WRC's SASTEP programme, due to WEC Projects' experience in the area of sewage and water treatment solutions. A licence agreement with USF for NEWgenerator is now in place. Says Rencken, "The ability to scale up the manufacture and roll out of NEWgenerator locally will not only ensure the country's ability to deploy it rapidly to where it is most needed but also grow an export market into the SADC region. Its modular and portable design means it can be installed in a standard shipping container, moved to site and brought on-line with minimal effort, easing logistical problems and ensuring a quick setup."

Innovative sanitation solutions

"The Water Research Commission along with its partners have been fostering the adoption of innovative, next generation sanitation technologies to address pressing sanitation challenges in South Africa. Through the SASTEP programme, the WRC has matched several innovative inbound technologies with capable commercial partners – entrepreneurs, SMMEs and manufacturers within the sanitation industry - who possess requisite skills to localise and manufacture these products at scale. This is why we matched and facilitated the licensing of the NEWgenerator to WEC Projects" says Akin Akinsete, Programme Manager, SASTEP.

The system's first major roll out will be in a large informal settlement on the outskirts of Soweto in Gauteng. The community relies mainly on portable toilets which lack the capacity to operate effectively with a large number of users. The NEWgenerator demonstration plant has been designed to cope with up to 100 users each per day with the potential for expansion of its capacity to meet local requirements. WEC Projects will continuously monitor and test the system during its use, sampling output and reporting regularly to the WRC and USF teams.

"While NEWgenerator addresses a number of urgent social needs, particularly in rural and informal settlements, it can also be used in other areas," adds Rencken. "These can include eco-tourism, for schools, housing projects and in emergency situations. We are proud to be associated with a project such as NEWgenerator and look forward to its future development and deployment in Africa."

ALPLA on expansion trail

Verigreen Packaging facility in Durban.

HOT on the heels of its acquisition of Durban based Verigreen Packaging, ALPLA Group, a global manufacturer of plastic packaging and a recycling specialist, has taken over Plastisax S.L.

The Spanish company produces plastic bottles for the cosmetics, home and personal care segments. The takeover will enable an increased use of recycled material in production operations and a strengthening of the circular economy in the region.

With the purchase of the Plastisax S.L, ALPLA is consolidating its market position in eastern Spain and expanding its production capacities mainly for packaging solutions made from the plastic HDPE (high-density polyethylene). A smaller product area also includes bottles made of PET (polyethylene terephthalate). EBM (extrusion blow moulding) and SBM (stretch blow moulding) are used as production technologies.

Verigreen Packaging specialises in bottles and canisters for lubricants such as engine oils and has a workforce of 25 employees at its site in Durban. "This acquisition is the perfect fit for our strategy," explains Mike Resnicek, Managing Director of Sub-Saharan Africa at ALPLA. "It offers us an inroad into a market segment in which we have not been present in southern Africa until now as well as generating synergies for our existing customers and giving us opportunities to further diversify our portfolio."

With the acquisition, ALPLA is increasing its involvement in this region. In 2017, it acquired Boxmore Packaging, the African market leader in the manufacture of PET bottles, PET preforms and caps. A modern production facility together with a regional head office is currently under construction in Lanseria near Johannesburg. There is another production facility near to Cape Town. Outside of Africa, the ALPLA Group already has a wealth of experience in the production of packaging for lubricants.

Tip a hat to Bowler

IF the disruptions caused by the prolonged Covid-19 pandemic was the only thing Ottery-based plastics packaging specialist Bowler Metcalf had to endure...

The group in its interim period to end June also had to grapple with load shedding, material shortages, material price volatility and supply chain interruptions as well as a dour business environment.

But Bowler has shown over the decades that its lean and mean business model can withstand a bit of pressure. So no huge surprise then that the group registered a sprightly 14% growth in turnover to R636 million and that profit from operations was up an impressive 24% to R111 million.

CEO Friedel Sass pointed out that the packaging business had matched its prior best performance of 2017 in real terms. "Our ability to optimise situational circumstances has maximised the possible benefits from a good mix of products, productivity enhancements and continuous cost control."

But it's not all batten down the hatches… Bowler is looking to bolster operations with various capital expenditure projects worth some R110 million. Sass said around R75 million was already spent during the interim period with the balance to be completed in the second half.

A chunky R38 million was spent on the property portfolio with two upgrades in Epping and Philippi.

Sass said that during July Bowler's Extrusion Blow moulding plant was seamlessly relocated into the enlarged Philippi site. "With this relocation and infrastructure build, the company is positioned to expand its container and injection business with the necessary focus and space."

He added that operational capital expenditure in the packaging segment topped R37 million – which was mainly earmarked for technology and capacity expansion.

Sass indicated that while the recent events in South Africa had dampened the green shoots of hope for a rapidly reviving personal care market, management remained determined to expand its share of the market during 2022 by optimising its available capacities and expanding relevant technologies.

Picture credit: Shini USA.

He said favourable returns were expected from four rooftop solar energy generation projects. What's more two additional business line expansions are likely to happen in the coming financial year. Sass said these investments were budgeted at R75m with a further R25m likely to be spent on systems, equipment and technology.

Meanwhile Caxton & CTP reported that its packaging operations had a pleasing half year performance to end June, improving profitability. Executive director Terry Moolman noted that once the lockdown restrictions eased and the bans implemented on certain categories had been lifted, there was a relatively quick return of demand, especially in the alcohol and fast-food sectors. He did concede some of this demand was attributable to filling supply chains and the response to consumer pent-up demand.

"The question remains how sustainable this demand will prove to be."

Moolman did disclose that Caxton & CTP's label operations in the Western Cape - that serve the wine, spirit and food market - had shown growth and improved profitability as the ban on alcohol consumption was lifted during the period.

Ship building maintenance

THE cost of docking a vessel or ship for repairs is extremely expensive. Not only are the docking (layup) fees to be considered, but the cost of qualified repair staff along with the various other consumable costs, and the potential loss of income is something to be noted, therefore a multitude of criteria must be considered before deciding to dock a vessel for repairs.

There are however several reasons why a ship would be docked for maintenance, a specific reason is that ships have anti fouling paint to reduce the number of algae and barnacles that attach themselves to the vessel. Over time the anti-fouling efficacy is reduced, and it must be removed and repainted.

Grinding Techniques, a proudly South African supplier and manufacturer of specialised abrasive products and part of the Tyrolit Group are able to offer a wide range of abrasive products for almost every kind of application; it aims to provide the best abrasive product for manufacturing and or maintenance processes.

It is important for abrasives to be task specific to obtain the best value for money and minimise the amount of time spent on each operation in order for the vessel to be returned back to service in the shortest time possible.

Grinding Techniques has a Superflex 115x22.23mm rough cleaning disc which will quickly and efficiently remove algae and barnacles from the hull. It will also continue cleaning the hull on its own to the metal surface without damaging or removing any of the base material.

Once this operation is complete, the range of Velcro discs in various grits is available to remove and sand down any remaining anti fouling paint left on the surface of the hull. This will ensure that the surface is prepared and ready for a fresh coat of anti-fouling paint to be sprayed on in no time.

Steel hulls can and will inevitably become damaged and will rust during its operational life. When there is surface rust, a rough cleaning wheel will be utilised in much the same way as when cleaning the hull of algae and barnacles. For severe rust, the range of Superflex flap discs are able to remove the rust quickly and efficiently. This will ensure that the surface is correctly prepared for further operations.

Where there has been severe damage to the steel hull and a portion of the metal must be removed to weld new metal replacement plates in, the range of Superflex 115mm to 230mm steel cutting discs (dependent on the thickness of the material) may be utilised to efficiently cut away the damaged portion.

Once the damaged section has been cut out, the Superflex range of steel grinding discs will quickly and efficiently remove any burrs and prepare the hull for the new plate to be welded into place. Grinding discs or flap disc ranges are ready to clean up the weld and blend it into the rest of the material.

For damaged aluminium hulls, the same procedure of preparation on steel hulls is followed except the abrasives used would be the Superflex Non-Ferrous range specifically designed for use on aluminium.

To cut out the damaged aluminium portion, Superflex aluminium 115mm to 230mm cutting discs would be specified, specifically designed to cut aluminium without contaminating the metal. Once the plate has been welded into place, Superflex Premium Non-Ferrous flap discs are then used to smoothly blend the weld. Velcro discs can once again be used to smooth out the surface in preparation for painting.

It is always important to ensure your required abrasives are task specific to fully take benefit of the product optimisation to obtain value for money.

Contact Grinding Techniques for training and technical assistance from product specialists. Tel: +27 11 271 6400, info@grindtech.com, www.grindtech.com

The definitive annual review of the container equipment market

DREWRY's annual review of the container equipment and leasing industry, based on a global census of fleet owners and a diverse range of forecasts unique to Drewry. It provides a level of detailed analysis and expert commentary not found elsewhere and is also available as an annual subscription package with the Container Equipment Forecaster which provides quarterly market updates as well as our latest forecasts.

Key areas of analysis within the Container Census & Leasing Annual Review and Forecast 2021/22 include:

- Development of the global container equipment fleet and structure, broken down by individual operating type, including 5-year forecasts
- Global production trends of new containers and 5-year forecasts, covering output, capacity, plant utilisation and costs, as well as manufacturer profiles
- Fleet ownership profiles and forecasts by container type, geography and owner category, including acquisition and disposal trends as well as profiles and rankings of the top lessors
- Assessments and 5-year forecasts of new build and second hand pricing, leasing rates, rehire rates and investment cash returns
- Extensive profiling and 5-year forecasts of all the main equipment types including dry standards and specials, refrigerated, regional and tank container fleets
- Expanded analysis and 5-year forecasts of the tank container market, including detailed breakdown by 5 categories of tank container types, as well as lessor and operator profiles
- Analysis covering the fast emerging smart container market, including estimates and 5-year forecasts of smart device installation rates

The Census and Leasing Annual Review and Forecast report, now available to purchase as a annual subscription package, with quarterly equipment forecast updates.

For more information email: enquiries@drewry.co.uk

Marine app finds ships - cargo space for sale

Addressing cargo owners' difficulties finding vessels with digitalisation

SINCE the Suez Canal blockage, the world supply chains have struggled to find vessels for their consignments and exorbitant rates to secure space. However, cargo owners need not limit themselves to their existing network of vessels by their traditional practices of calling brokers.

Marine Online is an effective platform for cargo owners to charter suitable vessels for their business needs. Ship owners who are on the lookout for cargoes can also leverage Marine Online's network of cargo owners for the same purpose. Above all, both ship and cargo owners enjoy both time and monetary savings through transacting with Marine Online's platform. Parties can be assured of zero hidden costs - compared to commissions charged by a broker in the traditional chartering process.

Kenny Phua, Vice President of Marine Online's chartering department, added "We understand the difficulties cargo owners face today from worldwide equipment shortage. Ship owners can leverage our network to source for cargo - especially those cargo owners who limit themselves to big carriers. We are confident Marine Online is an effective medium to help the industry sustain their operations sans the prevailing exorbitant rates and loadings."

Marine Online's platform offers both ship and cargo owners to charter through market or private orders - subject to their preferences. Parties are assured of secured and seamless transactions with all communications captured in the platform for record purposes.

Reefer container freight rates to outgun dry cargo rates in 2022

Philip Gray, Reefer Shipping Analyst.

REEFER container freight rates have risen sharply through 2021, but in contrast to dry cargo rates, are forecast to rise further in 2022, driven by catch up on North-South routes, according to Drewry's recently published Reefer Shipping Annual Review and Forecast 2021/22 report.

Drewry's Global Reefer Container Freight Rate Index, a weighted average of rates across the top 15 reefer intensive deep sea trade routes, rose 32% over the year to 2Q21 and by the end of 3Q21 these gains are expected to reach as much as 50% (see chart). But these advances are dwarfed by the recent surge in dry container freight rates which have seen average container carrier unit revenues more than double over the same period.

The resurgence in reefer freight rates has not been uniform across all trades. Pricing recovery has been particularly strong on the main East-West routes, where vessel capacity conditions have been noticeably tight. But North-South trades have generally seen less price inflation, particularly on export routes from WCSA, Central America and Southern Africa.

"In contrast to dry container freight rates which are expected to decline in 2022 as trade conditions normalise, reefer container freight rates are forecast to continue rising as price inflation feeds into North-South routes when long term contract rates are renewed," said Drewry's head of reefer shipping research Philip Gray. "Most reefer cargo on these trades moves on long term contracts."

The key driver of reefer freight rate inflation has been capacity related, as perishables shippers have competed with higher paying dry freight BCOs for scarce containership slots, despite ample reefer plug capacity provision. Meanwhile, continued disruption across container supply chains has led to acute shortages of reefer container equipment, already challenged by the particularly imbalanced nature of reefer trades.

"We believe that these conditions are short term and will self-correct as trade normalises from mid-2022," added Gray. "However, we expect reefer container equipment availability to remain an issue for certain trades during their peak seasons, as the global fleet is not expected to keep pace with rising cargo demand, despite record output of new build containers."

These conditions have provided short term reprieve to specialised reefer vessels, as some BCOs have returned to the mode seeking relief from congested container supply chains. But despite these developments Drewry estimates that the specialised reefer vessel's share of the perishables trade fell to 12% in 2020 and is expected to decline further into single figures over the next few years.

Hence, despite a 0.4% decline in global seaborne perishables trade in 2020 to 132 million tonnes, containership reefer liftings advanced 0.3% to 5.4 million teu. Further modal share gains and buoyant cargo demand will see containerised reefer traffic expand at a faster pace than dry cargo trade from 2022.

The contraction in overall seaborne perishables trade in 2020 was much milder than for dry cargo, demonstrating the stronger resilience of reefer trades to economic shock.

The trade was particularly impacted by a shuttered hospitality sector which reduced demand for deciduous fruit, fresh vegetables and frozen potatoes, while Covid-19 containment measures cut crop production and fish catches. Meanwhile, an outbreak of fusarium TR4 disease in the Philippines weakened growth in banana trades. But cargo demand was supported by a booming pork trade, owing to African Swine Fever driven imports into China.

Seaborne reefer traffic picked up through 1H21, expanding 4.8% YoY, led by meat, citrus and exotics trades but is not expected to expand at the same pace as dry cargo through the remainder of the year as it is not recovering from as deep a contraction in 2020.

"A combination of buoyant cargo growth and tight capacity conditions will continue to support reefer container freight rates and specialised vessel charter earnings," concluded Gray. "However, charter rates for larger reefer vessels that have been in particularly high demand of late are expected to wane as capacity conditions ease."

We value your input

Only through your input can we continue to improve.

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editor@cbn.co.za

CDC to deliver key liquid bulk infrastructure for Nelson Mandela Bay

TRANSNET National Ports Authority (TNPA) encourages the current Port Elizabeth Liquid Bulk Tankfarm tenants – as well as any other parties interested in securing liquid bulk storage capacity – to contact the Coega Development Corporation (CDC). This is premised on TNPA's confirmation of its support and assistance to the CDC in its endeavour to develop the Coega Liquid Bulk Terminal within the Coega Special Economic Zone (SEZ) located adjacent the Port of Ngqura.

TNPA's pronouncement of support is informed by its decision to not proceed with the development of a Liquid Bulk Terminal at the Port of Ngqura after careful consideration of:

- the market environment;
- causal factors that led to the termination of the OTGC project;
- functions of a landlord authority which dictates that it should not involve itself in port operations;
- advanced progress of a CDC Liquid Bulk Tank facility on the Coega SEZ;
- risk of oversupply of tank facilities if both the CDC and TNPA develop respective tank farms without due regard to what the other SOE is doing; and
- coordination of actions of the respective SOEs as per section 11(3) of the National Ports Act.

The development of a Liquid Bulk Terminal at the Port of Ngqura is one of the strategic projects that the port authority has been pursuing in an effort of increasing the liquid bulk port capacity for the Nelson Mandela Bay region. The project was prompted by the planned closure of the Port Elizabeth Liquid Bulk Tankfarm, the resultant impact would be no liquid bulk storage facility for clean fuels (i.e. petrol diesel, and paraffin), feedstock and Liquid Petroleum Gas (LPG) in the region.

Pursuant to an open and competitive tender process issued in terms of Section 56 of the National Ports Act No.12 of 2005 (the Act), OTGC was appointed as the facility operator to undertake the planning, design, funding, construction and operation of a new liquid bulk handling and storage facility at the Port of Ngqura. In October 2020, OTGC indicated that the project would not proceed due to commercial viability challenges. The project was terminated, and the site was handed back to TNPA in November 2020.

TNPA, being a responsible landlord authority and operator of last resort in terms of the Act, then had to involuntarily step in to consider a liquid bulk storage solution at the Port of Ngqura.

In June 2021, TNPA appointed the CDC as its implementing agent for the execution of the relocation of the Port of Port Elizabeth Liquid Bulk Tankfarm and the development of a Liquid Bulk Terminal at the Port of Ngqura. This was also premised on the advanced plans that the CDC had implemented in the delivery of a tank farm in the Coega SEZ, which would ensure that the tank farm is brought on stream sooner than other alternatives.

TNPA's decision to discontinue with the development of a Liquid Bulk Terminal at the Port of Ngqura has no impact on the planned closure of the Port of Port Elizabeth Liquid Bulk Tankfarm, hence tenants are encouraged to engage the CDC regarding liquid bulk storage.

The closure of the Port of Port Elizabeth Liquid Bulk Tankfarm will pave the way for Phase 2 of the long-awaited Port Elizabeth Waterfront, a catalytic project that will change the physical and economic face of the Port of Port Elizabeth and Nelson Mandela Bay.

Easing the headache of large motor interchangeability

WHEN companies look at replacing large motors which were purchased and installed 20 to 30 years ago, they often find that frame sizes are smaller – which means the new models do not fit on the old bases.

The good news is Zest WEG has the answer: a custom-engineered adaptor plate which allows a smaller frame to fit on the existing base. According to Floris Erasmus, sales specialist HV motors at Zest WEG, this solution overcomes the problem without requiring any physical changes to the base.

"Many of the large motors operating in South Africa – in the larger size ranges of 400 to-500 kW and over – were manufactured according to the North American NEMA specifications – in inches," says Erasmus. "If they are replaced by a motor made to IEC specifications – in millimetres – the size of the frame will be different."

An example of the new standard flange mount electric motor which will not fit onto this gearbox, so motor dimensions have to be modified, usually with an adaptor plate.

Also, he says, the dimensions of motors have generally become smaller over time, as efficiencies have improved. The result is that the frame size of a new replacement motor – whether NEMA or IEC – will invariably be smaller than that of the older units.

"The implication of this dimensional change is significant for customers, as it can become costly to adapt or replace the carefully constructed base," he says. "These large motor bases have been designed to handle heavy weights and considerable torque – often in excess of 10 000 Nm. To remove this and build another of the correct size is usually time consuming and expensive."

There is also the height of the shaft to consider, he says. Ideally, owners want their replacement motor to occupy the same footprint in their factory, mine or workshop as it occupies a specific place to power the required operation.

"Smaller dimensions also mean that the shaft height may be too low," says Erasmus. "Fortunately, a well-designed base plate can generally accommodate this change as well."

He highlights that Zest WEG will conduct the necessary measurements on the existing old motors and supply a specially machined, fit-for-purpose adaptor plate. This will allow the new motor to fit on the existing old base and ensure a fairly hassle-free installation for the customer. Parent company, WEG's state-of-the-art facilities in Brazil, India and Portugal that manufacture the large motors can also supply the adaptor plate, ensuring that there is a perfect match.

For more information visit www.zestweg.com

Sustainable lubrication solutions

CALLUM Ford, National Marketing Manager at Lubrication Engineers (LE) South Africa, says there are a range of sustainability considerations when it comes to lubrication and even lubrication cleaning schedules.

"LE offers a range of products and services specifically designed to help organisations who are looking to embed sustainability into their business strategy at every level," he says. "Not only have we focused on developing oils and greases that will help our customers to improve their energy and fuel efficiency, we've also worked to create eco-wise products that are better for the environment. Our solutions can help to reduce energy use, cut emissions (through improved efficiency) and protect the environment. This can help mines and other large-scale organisations to meet their ESG targets."

LE's Earthwise range offers non-toxic products designed for specific environmental needs. For example, Earthwise EAL Wire Rope Grease (3353) is a certified environmentally acceptable lubricant recommended for use in applications on or near waterways. It is readily biodegradable, exhibits minimal aquatic toxicity and will not accumulate in the cells of fish and other aquatic life forms.

LE also offers eco-wise solutions to help deal with lubrication spills and cleaning requirements. "Oil spills can kill microscopic organisms, damaging entire food chains, and causing real environmental damage. We offer an incredible solution to help with oil spill, called Oil Spill Eater II (OSE II). It was developed in 1989 in the USA and has been used to clean up more than 44 000 spills since. It's approved by the US Environmental Protection Agency and the UK Marine Management Organisation. It uses a biological enzyme to convert waste into a natural food source for bacteria found in aquatic environments. Unlike other supposed bioremediation oil clean-up techniques, OSE II is not a bacterium, a fertilizer or dispersant product."

As far as LE has been able to ascertain, OSE II is the world's most environmentally safe and cost-effective bioremediation process for the mitigation of hazardous waste, spills and contamination virtually anywhere of any size, large or small. Essentially, OSE II contains nutrients that attract indigenous bacteria. These then rapidly multiply, which speeds up the natural spill remediation process as the bacteria release enzymes and biosurfactants that attack the spill. The biosurfactants emulsify the spill, breaking it down to be used as a food source for the bacteria, with the end products being CO2 and water. OSE II can bioremediate most organic-based compounds and almost all hydrogen-based compounds.

For more information on how LE can assist with meeting environmental and ESG requirements, contact info@lubricationengineers.co.za

Surface preparation is the key for successful coating applications

BLASTRITE is South Africa's largest manufacturer and distributor of granular abrasives to the surface preparation industry and offers a range to suit the various surface preparation applications in the corrosion control process.

There are several factors to consider when selecting an abrasive for a blasting application, and Blastrite can assist with both the abrasives and the technical expertise in this regard.

When selecting an abrasive, consideration should be given to the following:-

- Is this a once-off or on-site blasting project where a disposable product should be used, or is there a recovery system where a recyclable abrasive should be used?
- What is the substrate that is to be blasted? Blastrite supplies abrasives for ferrous and non-ferrous substrates.
- What is the current condition of the substrate? Is there an existing coating to be removed; is there heavy rust, or mill scale present?
- What is the desired condition of the substrate after blasting? In most instances abrasive blasting is done to create a profile (roughened surface) prior to a coating to create a key for the coating to adhere to. Other applications require a rubber lining to be removed, a surface to be peened or polished, or there is a desire for a certain aesthetic appearance to the surface.

Blastrite can assist with recommendations on the correct size, shape, and type of abrasive. Abrasives such as Blastrite Platinum Grit®, Microblast Garnet®, Steel Grit, Steel Shot, Glass Grit, Glass Beads and Aluminium Oxide can be used to achieve the desired results.

With 40 years of experience in surface preparation, Blastrite can offer the best abrasive for the application to achieve the desired results.

To review its abrasives and painting preparation products visit the website www.blastrite .co.za

Rising sea level impact on saltwater corrosion

THE Intergovernmental Panel for Climate Change (IPCC) recently issued a new report warning that unavoidable rising sea levels will threaten saltwater intrusion on coastal infrastructure worldwide.

To avoid metal and concrete corrosion, the IPCC is pushing for a global investment for climate change mitigation.

The IPCC is a United Nations body that possesses a mandate to report scientific research on human-induced climate change. For its research study, the IPCC reportedly undertook a wide-ranging review of relevant scientific literature.

The panel's most recent findings have since been published in its Assessment Reports on climate change.

Report Findings

According to the IPCC report, between 1901 and 2018, the mean sea level around the world rose 200 mm - higher than any other century for the last 3 000 years. In looking more closely at the numbers, from 1901 to 1971, the mean sea level rose about 1.3 mm each year. From 1971 to 2006, that yearly increase rose to 1.9 mm.

Source: watcherfox / Getty Images

The majority of the sea level rise, however, occurred from 2006 to 2018, where sea level rose roughly 3.7 mm each year.

Since 1971, the IPCC attributes at least 50% of the rising sea levels to thermal expansion. Other contributing factors included melting glaciers (22%), melting ice sheets (20%) and changes in land water storage (8%).

From the research gathered, the IPCC estimates that two-thirds of the Earth's coastlines will rise by 20% more than the mean global increase. Additionally, due to these rising levels, the extreme sea-level floods that once occurred every century would start to happen annually in half of the outlined locations by as early as 2100.

The report went on to further outline the severity of potential saltwater corrosion, noting on the recent collapse of the Champlain Towers South condo building in Surfside, Miami. The tragic collapse was the result of saltwater corrosion experienced within the structure's basement. In a 2018 inspection report, it was noted that the building was suffering from "abundant cracking and spalling in various degrees."

"Spalling," IPCC explained, is concrete degradation with noticeable crumbling or cracks forming. The cracks and crumbling are ultimately a result of saltwater intrusion within the structural concrete, introducing chloride ions to the reinforcing steel rebar inside, which corrodes and expands the metal, breaking the concrete around it.

While many different governments have highlighted plans to mitigate climate change and better protect coastal communities, the IPCC adds that regardless of CO2 emission reduction or even elimination that the rising mean sea levels would continue to increase for hundreds of thousands of years.

The panel went on to report that its latest article was a part of the IPCC Editorial Series: Industrial Response to Climate Change, a collection of content exploring how different sectors are responding to issues highlighted within the IPCC 2018 and 2021 reports.

Drones used for corrosion inspection

SURFACE Corrosion Consultants Ltd. (Belfast, Northern Ireland) recently announced the launch of a new unmanned aerial vehicles (UAVs) service to monitor and inspect corrosion for clients across the United Kingdom and Europe.

According to the company, the new service will offer long-term solutions such as reduced overheads and operations costs, along with health and safety benefits when compared to traditional manual inspection survey methods.

The use of UAVs is quickly becoming the preferred technique for coating and inspection work across a wide range of sectors, the company explains, including oil and gas, construction, renewables, marine, industrial and transport, and infrastructure.

"UAV services relating to the inspection sector has seen huge advancement in recent times, as companies begin to understand the benefits of incorporating UAV inspection into their maintenance and repair budgets," says Rab Grainger, technical director.

According to the company, UAV inspections are the safest alternative to any manned inspection survey method. Using them on an asset can reduce the risks associated with human surveying, as inspectors are removed from potentially dangerous and hostile conditions such as height, weather, and radiation.

The improved ability to place a UAV anywhere goes beyond any other method of inspection, the company explains. "Essentially, UAV inspection can provide a number of solutions to combat what was once pain points within the inspection and coatings survey market," Grainger says.

The company's UAV services will be combined with an in-house digital solution named Surface Asset Management (SAM). The SAM app digitally streamlines all aspects of coating and non-destructive testing (NDT) inspection to simplify the surface asset management process.

"Our UAVs are closely linked with SAM, our trademarked software, which will generate immediate conditional survey reports as the UAV is in mid-flight, removing the need for manual data input," Grainger says. "Multiple areas can be surveyed in a short period of time, transforming what was conventionally a lengthy task into a much more efficient and safe process."

Image credit: Fruit Growers News

The company's AMPP coating surveyors are now fully qualified with GVC (general visual line of sight certificate) drone training certifications approved by the U.K. Civil Aviation Authority (CAA). These surveyors can inspect onshore and offshore assets in high-resolution, 4K imagery with the use of onboard cameras.

According to the company, UAV inspections offer a number of cost-saving benefits, as well. For example, the surveys can be carried out while an asset is still operational, which reduces any costs associated with isolating an area or shutting down an entire asset. Further cost savings can be achieved as companies no longer require a manual process such as rope access technicians, mobile elevating work platforms, or scaffolds.

"UAV inspection reduces days, weeks, and sometimes months of planning associated with the logistics of shutdowns and manned inspections," Grainger says. "Our surface inspectors have years of experience in the coating industry, which means we know what to look out for, and we can implement a real plan to support the next steps to protecting an asset."

The CAA-approved GVC course was delivered by Heliguy and consisted of three parts: theory examination, a practical flight assessment, and the completion of an operations manual.

For more information on the new UAV service, visit www.consultsurface.com/uav-inspection.

Source: Surface Corrosion Consultants Ltd., www.consultsurface.com

Bending the future of metal fabrication

CONVENTIONALLY, most press brakes are operated via programmable system inputs, but pieces of metal are still aligned and placed manually. A process which, thanks to a collaboration between the innovative minds at leading industrial robotics company Yaskawa Southern Africa and specialist machinery supplier Metal Chip Machinery, is about to change.

The robotics and press brake integration first established itself when Yaskawa Finland and European press brake manufacturer Coastone collaborated on a new solution five years ago, leading to a successful long standing relationship between the two companies and setting a precedent for a similar local partnership today.

"When we had an enquiry for a press brake robotic bending cell, it was a natural progression for us to talk to Metal Chip, who are the South African distributors of Coastone. The existing interface between the Coastone press brake and the Yaskawa robot makes high integration a lot easier," says John Mostert, Sales Engineer at Yaskawa Southern Africa.

Automation is synonymous with providing cost-effective solutions to customers and the press brake integrated with a Yaskawa robot aims to do just that.

Mostert highlights the opportunity for local fabricators to rise above international competition. "The majority of electrical boxes that are sold in South Africa are very often produced in countries like China, so to remain price competitive, the cost per unit has to be reduced."

For all the benefits that robots and automation bring to the table, the most common follow up questions tend to be about maintenance. "When it comes to maintenance, very little is needed on the robot for at least the first seven to eight years, other than just the standard services," says Mostert.

Press brakes are hardy machines that don't wear easily, with many working perfectly even decades after purchase. "What does change over time is the software and controls that are simply modernised and updated". Moriarty notes that the Yaskawa robot integrated press brake will be this client's second press brake, building on their operational efficiency even further following their initial investment. "The first one already doubled their production in manual mode."

On providing their client with an efficient solution, Mostert describes the functionality of Yaskawa's integration. "The robot is fitted with a vacuum gripper device with suction cups that will pick up the various pieces of sheet metal and present them to the press brake for bending. The gripper is designed to easily handle the material despite its change in form after bending shape multiple times." Before product delivery, Yaskawa provides all customers with training for the robot operators.

This is followed by a collaborative process whereby both the press brake and robot are programmed and calibrated to spec.

With new opportunities to ramp up production and challenge international competition, the future of South African sheet metal fabrication is quickly bending back into shape. All Coastone press brakes are now available with the option of a Yaskawa robot interface already integrated, allowing for seamless plug and play connection.

For further information, please contact: Andrew Crackett: andrew@yaskawa.za.com

Working with stainless steel

STAINLESS steel (INOX) is often a first choice material to work with because of its corrosion resistance, longevity and cost-effectiveness. Working with INOX, however, does pose some challenges - especially if incorrect tools and processes are used.

Marius Steyn, Training Manager at PFERD South Africa explains, "The South African stainless steel and steel industries are well established in the supply of high-quality steel. Stainless steel applications can be found in all of the major industrial sectors, be it food, beverage, pharmaceutical or automotive and it is important to achieve the specified surface conditions and finishing. In order to obtain a high standard, certain tools and in-situ arrangements need to be adhered to for the process to be successful and cost-efficient".

Establish the function

Differing surface functions determine the final surface roughness and finish of the stainless steel. Industrial applications, for example, may require a surface definition that prevents bacterial growth to ensure a safe and hygienic environment as well as to maintain corrosion and wear resistance in order to prevent structural damage.

In the retail or architectural sector, aesthetics take precedence and priority is placed on the stainless steel's final appearance. Therefore, it is important to establish what function the finished stainless steel surface will perform.

Eliminate cross contamination

Stainless steel is an alloy of iron with a minimum of 10.5 percent chromium. Chromium produces a thin layer of oxide on the surface of the steel - the "passive" layer - this prevents surface corrosion.

Damage to the passive chromium layer, caused by incorrect working methods can lead to the stainless steel rusting. Cross-contamination of INOX is one form of damage that can cause it to rust.

"The prevention of cross contamination of non-stainless with stainless steel is a crucial factor when working with stainless steel in workshops. PFERD advises customers to protect the work components at hand from surface contamination and contamination from other materials", Steyn said.

Sparks from close by metal cutting and grinding operations can embed themselves in the stainless steel and lead to its eventual deterioration. This can occur sometime after installation of the stainless steel products and would then require costly repairs in accordance to best practises.

Only specialised grinding and polishing components for stainless steel should be used and all non-stainless consumables should be avoided due to the possibility of contamination.

Steyn added, "The protection of the stainless steel operation goes as far as recommending the establishment of dedicated stainless steel working bays and separate storage facilities for materials and components that are specifically designed for stainless steel operations. A clean environment as well as ensuring the stainless steel itself is clean, by using dedicated cleaning agents, is recommended".

"Similarly, it is important to select grinding tools without any ferrous, chlorinated or sulphurous fillers. Wire brushes with stainless steel or Silicon Carbide (SiC) filaments are specifically designed to be stainless steel compatible", said Steyn, adding, "PFERD have conducted enormous research into stainless steel best working practice, which is readily available on our website".

Tool selection

Small and tight spaces require different tools compared to surfaces that are more accessible. The cleaning and smoothing of a steel weld seam requires completely different tools to those used for brush matting or finishing of stainless steel.

Technological advances in grinding and polishing tools for INOX help eliminate many of the material's challenges. Heat discolouration in the grinding area, which occurs due to stainless steel being a bad conductor of heat, can alter the metal's metallurgical compound and reduce its corrosion resistance.

"The POLIFAN CO-FREEZE, INOX Cut TC Burrs and Thin Cut-off wheels are but a few of the 8 500 products in our product range", says Steyn, adding, "Greater understanding of the correct tool selection and application of how they interact with stainless steel is a conversation PFERD welcomes".

For additional information, or to arrange an on-site product evaluation, please contact PFERD South Africa on: Tel: 021 552 5122

Creating value for 40 years

BLASTRITE is a family-owned and managed manufacturer and distributor of granular abrasives, having established itself over the past 40 years as a technical partner to a wide range of industries through the ownership of resources and expertise in manufacturing.

Blastrite has two mineral processing facilities in South Africa as well as a network of sales and distribution infrastructures in Cape Town, Durban, Richard's Bay and Johannesburg as well as additional distributors in Pretoria and Port Elizabeth, all of whom supply the shipping, oil and gas, construction, mining and satellite industries.

Blastrite is also a well-known brand both regionally and internationally with distributors of its products in north and south America, Europe, west and east Africa, the Middle East and north Africa, southeast Asia and Australasia, while southern Africa is serviced by South Africa directly.

A market leader in the abrasives market, Blastrite has two mineral processing facilities that produce industrial garnet known as Microblast®, and its world leading Blastrite® Platinum Grit.

It also manufactures Trackrite®, a unique product used for traction control of locomotives.

Blastrite also imports a wide range of abrasives for various applications, such as Industrial Glass Beads, Aluminium Oxide, Steel Grit, Steel Shot and retroreflective Roadmarking Beads.

For more information visit www.blastrite.co.za

Local protection for ladies feet

OVER the years, women have been making up a greater proportion of the workforce, and this includes sectors that have typically been male-dominated such as mining, manufacturing and construction. However, there are still limited offerings in specialised female safety footwear within these sectors.

"This is why Sisi Safety Wear is pleased to launch the Basi Metaguard boot, the first locally produced metaguard safety boot for women. The metaguard protector is primarily designed to protect the bridge of the foot from falling rocks and other hazards prominent in the mining industries. There is a serious lack of technical safety offerings for women, with many companies still issuing their female staff safety wear designed for males," says Predahni Naidoo, Brand Manager of Sisi Safety Wear. "With the growing number of women entering the mining sector specifically, it was important to develop a solution for women against these types of hazards that can also occur in other industries." she continues.

The Basi Metaguard dual density boot offers an SRC slip resistance rating, anti-static properties and steel toe cap that is SANS/ISO 20345 certified. Sisi Safety Wear is invested in providing solutions for women entering more hazardous workplaces with durable and reliable offerings.

Women deserve both safety and comfort in the workplace. With locally manufactured, women-specific safety wear ranges readily available, there is little excuse for organisations to not cater to the needs of their female workforce.

Hydrogen engines move ahead

CUMMINS hydrogen-fuelled internal combustion engine (H2-ICE) programme is ready to move ahead with the development of a medium-duty 6.7-litre and a heavy-duty 15-litre engine.

Based on next generation platforms, the new hydrogen engines will aim to achieve zero carbon emissions, enhanced power density and improved thermal efficiency.

The engine development work will be accelerated after receiving a £7.2 million funding award from the UK Government provided through the Advanced Propulsion Centre (APC), recognising the potential for H2-ICE to play a major role in decarbonising commercial trucks and construction equipment from 2025 onward.

Designated as the APC18 BRUNEL Project, the technical readiness work will expand on Cummins' experience from its existing H2-ICE programme and recent proof-of-concept testing. Planned development of the 6.7-litre hydrogen engine will focus on medium-duty truck, bus, and construction applications, such as excavators and wheel loaders. A new 15-litre platform offers the potential to bring hydrogen gas-fuelled engine capability to long-haul trucks with up to 44-ton gross vehicle weight and other heavy-duty applications.

RGM Cranes supports productivity at Sandvik's new facilities

Leveraging a healthy existing relationship with RGM Cranes, Sandvik Mining RSA appointed the company to provide 19 overhead single and double girder cranes, ranging from 3 to 30 tonnes in capacity, at its new facilities in Kempton Park.

Anthony Breedt, Technical Department Project Coordinator at Sandvik Mining and Rock Solutions Southern Africa, explains that in addition to RGM Crane's track record, factors that were taken into consideration in the awarding of the contract included customer service, the ability to quickly and efficiently formulate bespoke solutions, and the ready availability of spares and components.

"As an added bonus for Sandvik Mining RSA, RGM Cranes' overhead single and double girder cranes are highly affordable, making the cost-to-performance ratio extremely favourable," says Shaun Field, Sales Engineer at RGM Cranes.

Field says the selected RGM Cranes overhead cranes incorporate Guralp equipment that includes a hoist monitoring system, electromagnetic brakes, predictive maintenance application, programmable control unit, variable speed drive control on cross and long travel motions, as well as load limits in a sheave bracket to assist with uncalibrated loads.

The hoist monitoring system quickly identifies and provides feedback on any crane faults; operator faults and mishandling; overloads; excessive use; the amount of lifts completed in one shift and the number of hours a crane is in operation on a daily basis.

The project rollout was conducted in three phases:

- Workshop 1 – Rebuilding of all steel track units.
- Workshop 2 – Rebuilding of all rubber tyre vehicles with local components in accordance with customer requirements and OEM standards.
- Workshop 3 – Production unit where Sandvik will build new units locally.

RGM Cranes worked closely with the Sandvik team to develop a floor plan and workshop layout that would optimise the functionality of each of the cranes. "The cranes are being used for various operations within a number of sections that include maintenance, production, processing, wash bay, components department and the manufacturing department. It was important to offer a combination of crane configurations that would maximise crane usage for the different area applications and equipment to be lifted," says Field.

Breedt says the project was expedited in a seamless manner, with RGM Cranes installing and commissioning all cranes ahead of the original schedule. "A major factor in the success of the project was the open line of communication the RGM Cranes team maintained from the outset. In addition, the uncompromising technical advice and support provided by RGM Cranes has ensured that the installation has been completely stress-free and safe for all stakeholders. This is a perfect example of a company that doesn't just want to sell their products, but provides the right type of equipment for our specific applications to ensure maximised productivity for Sandvik Mining and Rock Solutions." ■

RGM Cranes

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Lock Bolt pins and collars 'hold' in heavy-duty, high-vibration applications

ACCORDING to BMG specialists, vibration and shock can quickly impair joint integrity and negatively affect overall product performance, especially in demanding applications, like vibrating screens.

"BMG's Lock Bolt pins and collars - which are designed to replace bolted and welded joints -provide high-strength, vibration-resistant fastening that reduces downtime and improves safety standards, by removing sheet gap and maintaining tension over time," says Maryna Werner, Fasteners Business Development Manager, BMG. "This robust two-piece fastening system is vibration-resistant, tamper-proof and fast and easy to install. An important advantage for users is that re-torquing is not necessary because of the annular locking groove design. Added to this, the Lock Bolt fastening system ensures high clamp force, tensile and shear strength and is fully compatible with existing tooling.

"Lock Bolt pins and collars are suitable for applications where structural integrity is critical, where welding is not an option and where safety cannot be compromised. Reliable structural joints ensure improved performance, greater productivity and profitability, as well as greater safety."

High vibration stress tests prove that these fasteners consistently maintain 98% of their pre-load and that the uniform clamp force is consistent for long-term joint reliability.

Selection of the correct fastening system requires consideration of the following factors: the material of the fastener or its surface coating should be compatible with the application's material; the diameter of the fastener is determined by the shear and tensile strength required and the fastener length depends on the total material thickness that requires fastening. Various fastener head styles are available for specific clearance requirements.

Other applications for Lock Bolt pins and collars include railway coach and truck body manufacturers and for petrochemical, mining, sugar mills, agricultural and construction operations. These fastening components are also suitable for solar panel frames and for lattice towers in electrical power generation.

For further information Maryna Werner, Tel: +27 11 620 7317: Email: marynaw@bmg-world.net

Spherical roller bearings overcome challenges of continuous casting

THE bearings used in continuous casting machines have to endure arduous operating conditions that include high temperatures, heavy loads, ultra-low speeds, water/water vapour and scale. As a result, bearing failures such as wear, flaking and fracture are commonplace, prompting increasing numbers of steel manufacturing plants to adopt NSK SWR (Super Wear Resistant) spherical roller bearings. These advanced bearings provide several times more wear resistance, flaking life and outer ring toughness than standard counterparts made from AISI 52100 bearing steel.

Among those enjoying the benefits of the NSK SWR series is an international steel manufacturing plant that was previously experiencing regular bearing failures in a continuous casting machine. The machine produces steel slabs, a process involving the application of heavy loads that were compromising the life of standard bearings due to wear and fatigue. Indeed, the average life of the machine's bearings was just 40-50 weeks.

A continuous-casting-machine.

In order to extend bearing life and reduce maintenance costs, the plant requested the assistance of NSK's expert engineers, who duly commenced a full application review. The experienced team noticed that the failure modes were consistent with others seen in continuous casting machines featuring standard spherical roller bearings.

NSK's bearing condition report contained a recommendation to adopt SWR series spherical roller bearings, which take advantage of specially developed steel with far higher wear and fatigue resistance. Proven in continuous casting applications since 2001, the wear resistance of SWR bearings is three times that of AISI 52100 bearing steel, while both flaking life and outer ring toughness are five times greater. Furthermore, NSK SWR bearings can replace standard SRB bearings in continuous casting machines without modifying the axle, and work effectively with or without seals.

Minimised outer-ring friction helps to extend bearing life. This factor is important as friction due to differential sliding can promote uneven wear, flaking and fracture, which together constitute around 80% of defects found in the outer ring of spherical roller bearings at steel manufacturing plants.

For the customer, NSK suggested commencing a durability trial with SWR spherical roller bearings. Such was its success that the bearings delivered 60% longer operating life, leading to impressive annual savings of EUR140 000. This total arrives from the elimination of both downtime due to bearing failures and labour costs for bearing replacement.

Results of this magnitude are easily achievable in continuous casting machines, where standard spherical roller bearings are simply not robust enough to withstand the harsh operating conditions. In these applications, NSK's team of experts can help identify the source of the issue and recommend a solution based on its proven SWR series.

Maintenance engineers and technicians tasked with troubleshooting machinery or equipment featuring rolling bearings can take advantage of NSK's Bearing Doctor app. This effective tool provides information about correct bearing handling, mounting, lubrication and maintenance to prevent premature failure. The app also includes many images and sound clips to help users diagnose bearing damage and possible causes.

Further information about NSK's series of SWR spherical roller bearings is available at: www.nskeurope.com/en/nsk-innovative-products/swr-spherical-roller-bearings

JCB unveils compact tailswing sister to 220X

THE new JCB 245XR crawler excavator shares many of the features of the established 220X except that is has a reduced rear swing radius of just 1720mm.

This makes it 40% shorter than the 220X.

At 27 299kg, it is also a couple of tons heavier than the 24.7-ton, and 121mm wider.

Among features its shares with the 220X is the same 448 DieselMax Stage V engine delivering 129kW and 690Nm torque.

It also has – despite the short body – the same full size JCB CommandPlus cab, one metre wide and 2.86 cubic metres internal volume.

It comes with a choice of mono boom or TAB triple articulating boom. There is a choice of 2.4- and 3.0-metre dipper arms, for increased breakout or maximum reach. Maximum digging reach with the monoboom is 9 952mm, with a maximum digging depth of 6 627mm.

The hydraulic system uses latest generation Kawasaki pumps, with Kayaba main control valve for fine control. The hydraulic hose diameter has been increased to deliver improved flow with less resistance, boosting performance and driveline efficiency.

Initial operator feedback had been extremely positive, JCB said.

Chief innovation and growth officer Tim Burnhope said: "It's our strongest ever design. It's a design with purpose."

Rokbak is the new name for Terex Trucks

SEVEN years after taking over Motherwell-based Terex Trucks, Volvo Group has rebranded the business as Rokbak.

Rokbak's origins date back to 1934 when the Euclid Company of Ohio created the world's first true off-highway rear dump truck, the Model 1Z. Manufacturing at the Motherwell factory in Scotland began in 1950 when the Euclid Great Britain subsidiary was formed.

Within just four years it made 1 000 off-highway trucks in Scotland.

In 1970 Euclid's then owner General Motors (GM) rebranded the business as Terex. In 1981 GM sold Terex to IBH Holdings in Germany. Two years later, IBH went bankrupt and ownership of Terex reverted to GM.

GM sold Terex again in 1986/87 to Randolph Lenz (US interests in 1986; Motherwell in 1987). The haulage truck business was a mainstay of the expanding Terex Corporation over the next 20 years but recession forced Terex to consolidate its operations. In December 2013 Volvo Group agreed to pay US$160m for Terex Trucks.

"Our company has an incredible history and a proud heritage," said managing director Paul Douglas. "Seven years ago, we became a member of the Volvo Group, which allowed us to make major improvements in every part of our business. Millions of pounds have been invested in improving our products, modernising our facilities, expanding our network, and developing our people. It has been a process of continual evolution. That's why we feel it's right to recognize this evolution with a new brand name to launch an exciting new chapter in our history. And we'll keep investing to further improve our machines for our customers."

Melker Jernberg, president of Volvo Construction Equipment, added: "We are proud and excited to have the modernized Rokbak brand continue as a fundamental part of our organization," said. "We believe in a sustainable future, innovation and the power of our people and we see that all encapsulated in Rokbak. At the same time, the company has its own personality, heritage and loyal customer base and it will be exciting to see the brand evolve further as it sets out on this new stage of its journey."

Championing local manufacturing of workplace safety solutions

BBF Safety Group is an integrated workplace safety solutions provider that helps customers create safe working environments.

BBF Safety was formed on the basis of championing local manufacturing, procurement and SMME development – an objective more relevant now to get the South African economy back on its feet than possibly any other time in this country's history.

How it Began

In 2014, four of South Africa's largest safety footwear manufacturers joined forces to create BBF Safety Group (Pty) Ltd. The merger created the largest safety footwear manufacturer in Africa.

Since then BBF has transitioned to being an integrated workplace safety solutions provider now offering a full portfolio of head-to-toe Personal Protective Equipment (PPE) and SHEQ services including training.

We are a proudly South African business, employing more than 1,200 people at four ISO:9001 accredited manufacturing facilities across the country.

The Portfolio

BBF's safety footwear portfolio incorporates renowned brands such as **Lemaitre**, **Frams**, **Bronx Safety**, **Sisi** and South Africa's market-leading **Bova** range. **Wayne** gumboots as part of the portfolio has long been established as one of Africa's leading gumboot manufacturers having serviced the South African market for 80 years and counting.

We also manufacture workwear, Fall Arrest systems and specialized thermal protection wear, while the **Nikki** brand of hard hats and face masks is well-established in the head and respiratory protection categories. As an entity BBF is able to supply solutions throughout the various PPE categories, actively working to industrialise and localize ranges as far as possible.

Industrialisation, Transformation & Development

BBF Safety Group's mission has been to ensure economic empowerment, transformation and development in South Africa, forging partnerships with local SMMEs both upstream and downstream of the supply chain to create a network of highly committed, professional and efficient local suppliers and distributors.

We will continue to strive to service the safety needs of industries both domestically and abroad, while playing our part to drive the South African economy; through both our own manufacturing and services, as well as the suppliers and business partners with whom we work.

Find out more about our workplace safety solutions visit: www.bbfsafety.com or email:info@bbfsafety.com Tel: 031 710 0400

Wind energy can deliver vital slash to global warming

IMPLEMENTING advance wind energy scenarios could achieve a reduction in global warming atmospheric average temperatures of 0.3 to 0.8 degrees Celsius by the end of the century, according to new research from Cornell University.

"Early action will reap dividends," said Rebecca Barthelmie, professor in the Sibley School of Mechanical and Aerospace Engineering. "In terms of averting the worst of climate change, our work confirms that accelerating wind-energy technology deployment is a logical and a cost-effective part of the required strategy. Waiting longer will mean more drastic action will be needed."

Barthelmie and Sara C. Pryor, professor in the Department of Earth and Atmospheric Sciences, authored the research. It published in the journal Climate.

To avert environmental disaster, other greenhouse gas reduction strategies will also need to be implemented, they said.

In early August, the Intergovernmental Panel on Climate Change (IPCC) Working Group I Sixth Assessment Report said that climate change is rapid and intensifying, and that Earth's atmosphere could add 1.5 degrees C of average warming by 2040. To avoid further warming, the IPCC report said there must be transformational change.

Global wind resources exceed current electricity demand, Pryor said, and the cost of energy from wind turbines has declined sharply. "It makes perfect sense to rapidly deploy wind energy as a key part of decarbonizing the electricity supply," she said.

The global wind energy industry has been growing. Since 2005, the total installed capacity of global wind energy shows a 14% annualized growth rate for Asia, Europe and North America. Global wind energy electricity production expanded from 104 terawatt-hours (one trillion watts for one hour) in 2005 to 1,273 terawatt-hours in 2018, the paper said.

In 2019, wind energy generated approximately 6.5% of 26,600 terawatt-hours of global electricity demand. Six countries are generating more than 20% of their demand, while the United Kingdom, Germany and Spain are close to achieving 20% of electricity demand with wind energy. China has reported about 5% of its electricity supply from wind energy.

The United States generates 8.4% of its electricity from wind, as of 2020, with six states (Texas, Iowa, Oklahoma, California, Kansas and Illinois) containing more than half of wind energy capacity, according to the U.S. Energy Information Administration.

Wind turbines are now deployed in 90 countries, Barthelmie said, generating about 7% of global electricity, and the expansion of installed capacity of wind energy continues.

Sectors like solar and wind have become less expensive than fossil fuels. "So there really aren't any arguments anymore for not making this kind of change," Barthelmie said. "Both technically and economically, advanced deployment scenarios are feasible. It needs more political will."

The research was funded by the U.S. Department of Energy.

Story Source: Materials provided by Cornell University. Original written by Blaine Friedlander, courtesy of the Cornell Chronicle. Note: Content edited for style and length.

Long life polymer bearings overcome solar power issues

A critical point of failure on largecale solar panels has been addressed with the introduction of polymer bearings that dramatically improve the lifespan of the part and nulifies the need for maintenance.

Solar panles need to track the sun for maximum efficiency and the bearings that facilitate the movement usually take a beating and require regular maintenance to operate for any length of time in the harsh, arid and dusty climates where solar farms are traditionally located.

As a result, Polymer bearing manufacturer, igus South Africa has worked with some of the country's top design engineers to solve the problem and introduced its no-maintenance long life pillow block bearing.

Versatile solution

According to design engineer, Gerrit-Jan Cronselaar, of Super Armature Winding Africa, the designers and manufacturers of the SolTrac line of solar trackers, the pillow block design has eased the installation of its system as slight misalignment of the piles driven into the ground can be accommodated in the bearing itself rather than the pile/mounting hardware. This leads to faster and easier installation, saving effort and money in the process.

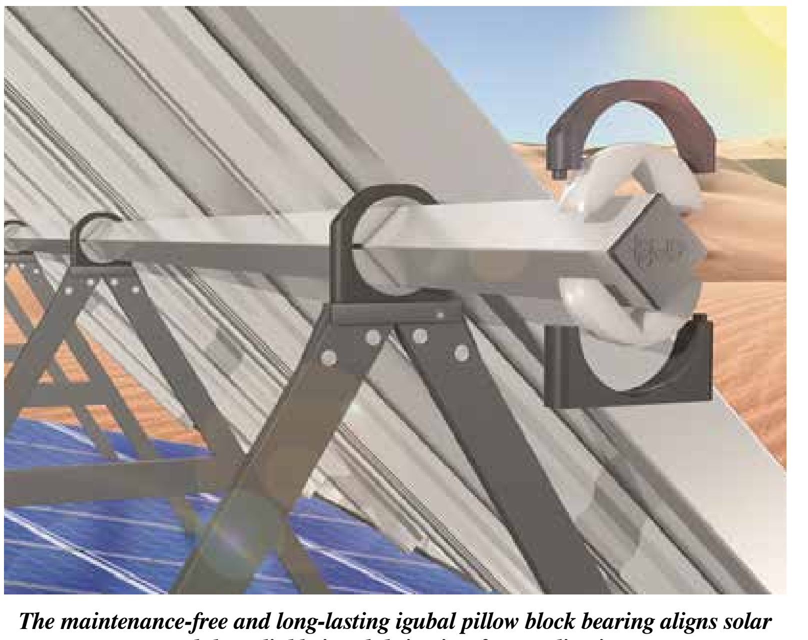
"The igus bearings have a long product warranty and longevity, are maintenance free and can handle dust and typical harsh conditions faced in African solar application areas. No other "traditional" bearing is available that can achieve similar performance and the design would have to be a lot more involved if bushes and an under swung design needs to be considered," says Gerrit.

Ian Hewat, managing director of igus South Africa, says bearings used in the alignment of the panels with the sun are typically the only moving parts, so need extra care when specifying these critcal components.

Lubrication free

"Our bearings are a lubrication-free solution, whose durability has been tested in the laboratory and is guaranteed for 25 years. Tests in our own 3,800 square metre test laboratory in Germany showed that the service life, wear resistance and load capacity were examined under real loads of the daily motion sequence, simulated in a time-lapse.

"The number of movements achieved under a load of 1.5 tons corresponds to a service life of 72 years. This is why igus guarantees a runtime of 25 years, which corresponds to the standard service life of a solar module," says Ian.



The maintenance-free and long-lasting igubal pillow block bearing aligns solar modules reliably in a lubrication-free application.

For more information contact igus South Africa, Tel: (011) 312 1848, Fax: (011) 312 1594, Email: ihewat@igus.de, Web: www.igus.co.za

Six solar projects completed

AIIM recently celebrated the achievement of Commercial Operation of the last of six solar PV projects awarded under Round 4 of the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP). The Projects, situated in the Northern Cape and North West Provinces, form part of a broader portfolio of renewable assets managed by EIMS Africa.

EIMS Africa is owned by the IDEAS Fund, an AIIM managed fund, and constitutes one of the largest South African owned renewable energy portfolios in the market and is expected to exceed 1GW of generation capacity by the end of the year.

Vuyo Ntoi, Joint Managing Director of AIIM, explained "This is an excellent achievement in difficult circumstances, and was down to the success of a committed team of professionals, proving the worth of this integrated management approach to delivering and managing these assets."

With nine existing projects under management and further projects in the pipeline, this platform is positioned for growth and is expected to play a leading role in the growth of the African renewable energy sector. Sean Friend, Portfolio Manager of the IDEAS Fund, explained, "We are pleased to have in place a core team of experts managing a sizeable portfolio of renewable energy investments. We have great plans to grow the business in terms of number of projects and their geographic location and look forward to working with Ryan and his team to make this a reality."

A new solid-state battery

ENGINEERS created a new type of battery that weaves two promising battery sub-fields into a single battery. The battery uses both a solid state electrolyte and an all-silicon anode, making it a silicon all-solid-state battery. The initial rounds of tests show that the new battery is safe, long lasting, and energy dense. It holds promise for a wide range of applications from grid storage to electric vehicles.

The battery technology is described in the 24 September, 2021 issue of the journal Science. University of California San Diego nanoengineers led the research, in collaboration with researchers at LG Energy Solution.

Silicon anodes are famous for their energy density, which is 10 times greater than the graphite anodes most often used in today's commercial lithium ion batteries. On the other hand, silicon anodes are infamous for how they expand and contract as the battery charges and discharges, and for how they degrade with liquid electrolytes. These challenges have kept all-silicon anodes out of commercial lithium ion batteries despite the tantalizing energy density. The new work published in Science provides a promising path forward for all-silicon-anodes, thanks to the right electrolyte.

Next-generation, solid-state batteries with high energy densities have always relied on metallic lithium as an anode. But that places restrictions on battery charge rates and the need for elevated temperature (usually 60 degrees Celsius or higher) during charging. The silicon anode overcomes these limitations, allowing much faster charge rates at room to low temperatures, while maintaining high energy densities.

Story Source: Materials provided by University of California - San Diego. Original written by Ioana Patringenaru.


BOVA
FOOTWEAR
SOME RANGES NEVER GO OUT OF STYLE
THEY JUST STEP UP THEIR GAME
In the later - 2000s, BOVA changed the game in South African Safety Footwear engineering, with the launch of their TRAX Range. Designed in partnership with our expert podiatrist, it combined superior safety and comfort like never before. Now we're putting our best foot forward again by re-engineering and expanding the entire Trax range. We've enhanced all the great features it's known for and added a whole lot more to make sure we stay a step ahead of the rest.
SOLE GRIP INCREASED TO AN SRC SLIP RESISTANCE RATING
With an 83% improvement on forward heel slip and 50% improvement on forward flat slip.
WEIGHT REDUCED BY 261g ON AVERAGE PER PAIR*
Without changing the fit (last remains identical) this reduced weight takes the equivalent of 1,3kgs off the back and reduces the energy exerted by 2,8% per step.
*based on size 8
7.7 X MORE SOLE FLEXIBILITY*
We've improved the flexibility of the sole unit, when compared to the first generation TRAX.
This improves durability at critical flex points and improves blood circulation throughout the body, which is associated with less fatigue and better focus.
*based on the ISO 20345 Flex Test
INTRODUCING TRAX 2.0
MUNICH 2.0 21002
Steel Midsole 21702
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
BREMEN 2.0 21001
Steel Midsole 21701
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
TAHOE 21021
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
ALPINE 21019
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
AMATHOLE 21018
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
HIKER 2.0 21013
Hiker Soft Toe 21513
ERGONOMIC DESIGN APPROVED BY A PODIATRIST
Size 5-13
Accreditations EN / ISO 20345
Ready to take the next step?
To find out more about the Trax range, we've got all the information and more on our website www.bova.co.za.

Inherent dangers require inherent protection!

SAFETY wear manufacturer Bova has launched its range of Arc Flash Protection garments. The Bova ARC range incorporates Beier's I-ARC fabric; an innovative solution in thermal protection fabrics that was developed in collaboration with LENZING™, a global leader in inherently Flame Resistant (FR) fibres.

The I-ARC material gives the Bova Arc range a significant advantage in both comfort and its inherent FR protection. Inherent materials maintain their FR qualities and these cannot wash or wear away, even when subjected to everyday household detergents and bleach. The fabrics also offer strong abrasion resistance and low shrinkage.

"Power generation and distribution, maintenance industries and electrical contractors don't always realise how important it is to wear the right protective garments. An arc flash is extremely dangerous and can affect people as far as seven metres away from the blast, which is why the garments must have the ability to self-extinguish as quickly as possible," explains Deane Nothard from the BBF Safety Group.

The standard for arc rated garments is that they can self-extinguish within two seconds once the exposure to a flame has been removed. However, this is normally measured in laboratory conditions on an unused garment, Bova wanted to emulate these tests with more real-life laundering scenarios. Internal tests were conducted after washes with an every day household detergent that includes stain removal and fine print advising against washing FR materials. The chemically treated FR fabrics representative of a number of popular arc garments currently in use, failed after as few as 15 washes and completely burnt out, whereas the I-ARC fabric at 15 washes didn't ignite at all. The bigger concern is that the treated fabrics showed no noticeable deterioration prior to their failure. The other major benefit with the Bova range specifically over other inherent FR garments is the comfort factor.

In any working environment, it is important to work comfortably. The Bova ARC range which is available in CAT2 – 13 cal/cm² and 52 cal/cm² respectively offer a superior weight to protection ratio – The lighter weight of the garments across both categories compared to leading competitors add to the proven comfort provided by the fabric's breathable properties and good moisture management; ensuring the wearer can still feel cool and dry while benefiting from the inherent FR protection. The LENZING blended materials contain both hydrophilic (water absorbing) and hydrophobic (water resistant) fibres to create an evaporative cooling effect.

This allows wearers across different industries and arc hazard levels to benefit from the superior balance of inherent protection, durability and comfort.

Visit www.bova.co.za/arc for further information and to view the range.

Respirator decontamination team receives leadership award

EARLY in the COVID-19 pandemic, health care systems faced an urgent need for life-saving personal protective equipment (PPE) for their health care workers. The explosive increase in demand for such products created shortages, even with a significant increase in production, and necessitated the reuse of items that weren't designed to be cleaned or decontaminated. The female-led 3M Global Respirator Decontamination Team sprang to action, tackling the need to evaluate decontamination methods of 3M disposable respirators and hoods. As a result of their tremendous work, the team has been awarded the prestigious Global Team Leadership Award by the Society of Women Engineers.

The team collaborated with external decontamination equipment manufacturers to analyse the effect of decontamination methods on the filtration and fit of 3M disposable respirators. These partnerships with leaders in health care decontamination allowed the team to test more than 35 decontamination methods to find the most safe and effective processes.

In a period of just two weeks, the team evaluated respirator filtration and fit performance, and generated data needed to support two of the first FDA Emergency Use Authorizations. The team also conducted hundreds of experiments to determine optimized wiping methods for reusable respirators, safety eyewear, PAPR hoods and face shields. This data and information were compiled into detailed reports that were shared with health care facilities to help ensure the safety of their staff. And after a total of three weeks, the team developed the first technical bulletin providing respirator manufacturer guidance on respirator decontamination.

"The impact this global team had in aiding the protection of many of the world's 59 million health care workers via the use of effective 3M PPE decontamination methods is incredible," says Rodney Hehenberger, Vice President and Technical Director, 3M Personal Safety Division. "They navigated a complicated global regulatory landscape and provided clarity during chaotic times. This team stepped up to the plate to provide vital instructions for health care organizations and the public to develop their own strategies for respirator conservation."

Achieving decontamination without affecting the performance of the PPE has been a crucial process for front-line workers during the pandemic. 3M is proud of this international team for coming together to deliver outstanding engineering contributions and innovative problem-solving to overcome the decontamination of PPE challenge during the pandemic.

RAM air gear dryer

RAM Air has developed a full range of convenient and affordable dryers made exclusively for drying a firefighter's personal protective equipment. The patented and NFPA-compliant PPE dryers are designed to dry freshly washed gear quickly and completely, enabling fire departments to get their firefighters mission-ready faster.

RAM Air's TG-4 Ambient Air Turnout Gear Dryer can dry up to four sets of PPE along with accessories (e.g., SCBA facepiece, helmets, gloves, boots, and hoods). In a temperature and humidity-controlled environment the dryer will dry in under four hours. When the heated air option is used, the TG-4H can dry that same clean turnout gear in two hours or less and will not exceed 40°C. The TG-4 and TG-4H touchscreen control safely ensures that the drying cycle complies with both OEM drying requirements and NFPA 1851's recommendations for drying gear.

Targets hard-to-dry areas

All Ram Air patented dryers employ a powerful fan that pushes air through gear from the inside out and uses flexible plastic mesh tubing that provides the flexibility necessary to ensure that air gets to all segments of a PPE element (e.g., sleeves on jackets and legs on pants) while limiting air loss and preventing air flow from following the path of least resistance.

Flexibility for all gear components

The dryers are more than just an effective way to dry coats and pants. Each unit comes fully loaded with at least four helmet dryers and 12 component ports for drying all PPE elements (e.g., helmets, gloves, boots, and SCBA facepieces).

Flexibility for locating the TG-4 in the fire station

The ambient air dryers are a piece of "plug and go" equipment. There's no special installation necessary (e.g., wiring for a 220V outlet or venting to the building exterior).

> "...a powerful fan that pushes air through gear from the inside out..."

The dryers come with casters and, when fully assembled, can fit through a standard-sized doorway that can be located anywhere in the fire station be it a fixed location or tucked away until it's needed as one firefighter can easily move it.

Visit Ram Air Gear Dryer.com to learn more.

Rising demand for warehousing bodes well for construction industry

THE outbreak of the Covid-19 pandemic has triggered an unprecedented boom in online trading which, according to Databuild CEO Morag Evans, bodes well for the construction industry, especially as far as the future of warehousing is concerned.

Global restrictions around lockdowns, quarantines and social distancing forced society to move online in order to work, live and survive, prompting the hasty dismantlement of the cultural and technological barriers that previously hampered the widespread adoption of online trading channels among businesses and consumers.

"The resultant rapid surge in e-commerce has accelerated the need among the fast moving consumer goods (FMCG) sector for last mile logistic facilities that expedite the movement of merchandise in the supply chain and minimise delivery time to the final destination," says Evans.

"This is evidenced in Databuild's dynamic database of active contacts, projects and tender opportunities, Databuild Online.

"We have begun tracking several warehouse construction projects for online retailers. For example, Takealot is building new warehouses in Cape Town and Kempton Park, while Cotton On has commenced construction on a new warehouse in Midrand."

Along with expanding warehouse and distribution centres, online retailers are also extending their physical footprint, Evans continues. "Amazon has chosen Cape Town as the location of its new headquarters in Africa and the R4.5 billion project involving 15 hectares of land was recently awarded to developer WBHO."

Unrest sparks opportunity

Evans believes the recent civil unrest and looting in KwaZulu-Natal and Gauteng, which severely jeopardised South Africa's supply chain, will further catalyse a shift in how FMCG manufacturers and retailers set up and manage their warehousing infrastructure.

"Rather than putting all their proverbial eggs in one basket and storing their products in one gigantically sized warehouse, we expect to see these role players making use of a diverse array of smaller warehouses strategically located closer to large urban centres. This will not only improve the delivery experience for their customers but also mitigate operational risk when it comes to stock security and availability."

> "...Takealot is building new warehouses in Cape Town and Kempton Park, while Cotton On has commenced construction on a new warehouse in Midrand."

Inner-city commercial properties could come into play here, Evans adds. "The boost in online shopping, together with rising unemployment figures, has negatively impacted brick-and-mortar malls and shopping centres with many retailers, especially small and micro-businesses, being forced to close their doors owing to the decline in foot traffic.

"Additionally, as local vaccination against Covid-19 gains momentum, the jury is still out on whether companies will eventually return to the office, allow their employees to continue working from home, or adopt a hybrid model of on and off-premise working.

"Consequently, property owners and landlords are currently hard put to find tenants to occupy empty office buildings. Logistics operators should therefore seriously consider repurposing these underutilised assets for use as warehouses and distribution centres."

"South Africans have time and again proven their resilience in the wake of calamity, and neither a global pandemic nor civil unrest will prove our undoing," Evans concludes. "The country has a golden opportunity to reinvent its supply chain and warehousing capabilities and the construction industry has an integral role to play in this regard."

For more information, go to: https://www.databuild.co.za/

Jungheinrich automates for Coca-Cola HBC

- *42-metre-high high-bay pallet warehouse in silo construction*
- *Monorail solution with bridge creates new transport routes*
- *All trades from one source*

JUNGHEINRICH is building an automation solution for Coca-Cola HBC at its Radzymin plant in Poland. The new warehouse system expands the existing facility and offers state-of-the-art technology. Some construction measures will be completed during ongoing operations. Commissioning is planned for 2022.

For the implementation, the Hamburg-based intralogistics expert relies on the 42-metre-high and 60-metre-long high-bay warehouse in silo construction. It ensures maximum space utilisation with a high handling capacity at the same time. The automatic high-bay warehouse comprises a total of four aisles and provides space for up to 14 000 beverage pallets, which can be stored double-deep. All processes in the high-bay area of the warehouse are fully automated and it has been designed with the option of expansion: Additional aisles can be added at a later date without any complications during ongoing operation.

The new warehouse solution also improves the transport route from production by modifications to and expansion of the existing conveyor systems: A monorail system with a bridge is now the heart of Radzymin. It transports finished beverage bottles to all available storage locations – both in the new high-bay warehouse and in automatic warehouses. Jungheinrich's custom-fit intralogistics concept allows an optimal flow of materials between the different areas in the plant.

Szymon Matulka, BU Engineering Manager Poland & Baltics at Coca-Cola HBC: "The facility is something special for us. With the automated high-bay warehouse and the improved transport routes, we are setting standards in terms of efficiency and safety. In this way, we ensure a consistently high availability of our products."

In addition, storage and retrieval machines from MIAS, the Jungheinrich subsidiary, bring speed to the automated pallet warehouse: Thanks to special devices, high speed prevails during and retrieval for goods weighing up to seven tons. Here, too, additional devices can be integrated if required. In addition, the existing Warehouse Management System (WMS) was replaced. In the future, Coca-Cola HBC will use only one WMS for the entire warehouse, which includes various intralogistics solutions. It will be used to manage all facilities and processes. The software helps to identify possible optimisations, such as the distribution of goods to the different warehouse locations.

Lech Sowinski, Project Manager Technical Sales ASRS at Jungheinrich: "For us at Jungheinrich, state-of-the-art intralogistics means efficient and economical warehouse concepts. This is exactly what the solution we designed for Coca-Cola HBC in Poland offers. The new warehouse impresses with an optimised material flow. Since all the trades come from a single source, rapid integration and optimal communication between the systems is also possible."

New reach trucks

DOOSAN has launched a new range of electric reach trucks: the BR14JW 9-Series is said to combine faster operating speeds with advanced ergonomics and greater driver comfort – making lighter work of heavy warehousing tasks.

The new 9-Series electric reach trucks are available in six moving-mast models with capacities between 1 400 to 2 500 kg, and in three chassis types: Heavy, Narrow or Standard. All models are equipped with Doosan's Guardian Stability System and Smart Sensor control, reducing mast oscillation by 40%, for greater stability and safer load handling when operating at heights of up to 13m.

Doosan's new ultra-compact BR14J-9 and BR16J-9 models are 12% narrower than the previous models, which together with a shorter chassis, offers a much tighter turning radius – allowing the operator to manoeuvre with confidence in aisles under 3m wide.

The BR20JW-9 and BR25JW-9 heavy models have the capacity to carry loads up to 2 ton and 2.5 ton respectively.

Operational performance has received a boost in Doosan's 9-Series, with design and engineering improvements delivering 15% faster travel speeds, 20% faster lifting speeds and 10% faster lowering speeds

Maximum manoeuvrability is available to the driver with a choice between 180 deg or 360 deg steering.

The 360 deg steering system is easier on arms, wrists and shoulders when changing direction quickly or manoeuvring in tight spaces.

Contact Doosan for more information: Tel: 011 864 7574 Email: sales.sa@doosan.com

Bulk handling weighing technology

INSTROTECH's multi-function weighing transmitter, the DPM6004MF is a powerful, compact, field-mounted unit that can be selected for a variety of weighing functions. Manufactured by Caolg Instruments and specifically designed for servicing organisations, weighing equipment manufacturing companies and individual users, the DPM6004MF is a single electronic unit for almost any weighing industry application such as, load cell transmitting; belt-weighing; loss-in-weight transmitter; through-put weighing; bag-filling; batch-weighing and a dynamometer. A multi-function unit allows users to keep one spare, replacing any of the above functions in the field, reducing stock holding requirements for manufacturers, integrators and factories.

The DPM6004 range consists of three models, the DPM6004LC is dedicated to standard load cell applications, the DPM6004BW is dedicated to belt weighing applications and the DPM6004MF that is a multifunction unit.

Standard features include:

- Rugged, powder-coated, cast aluminium housing with splash proof keypad
- Inputs from the load cell, incremental encoder & six digital
- Programming via keypad and LCD
- User-programmable function keys, digital inputs and relay outputs
- 15 point lineariser, min/max hold, auto-zero maintenance, preset tare
- PI control with auto-manual set points
- Outputs for isolated analogue 1-5/0-10Volts or 0/4 - 20mA
- Data logging via SD card

Version II of the DPM6004MF has an improved, simplified user menu interface, operation service manual, and much improved EMI immunity. Design engineers also improved the standard SD card functionality for fast on-site internet software upgrades with remote registration. While busy, they also vastly improved the on-board PI control, on-board system diagnostic information and output simulation function.

When used specifically for the bulk handling industry, the DPM6004MF can be used in conjunction with Instrotech's range of fully hermetically sealed, stainless steel load cells from Vishay Revere Precision Group. The Revere bending beam load cell, the model SHBxR, is particularly suitable for low capacity platform scales, packaging machines, belt-weighers, hybrid scales and process weighing applications.

Suited to capacities of 5 to 350kg, the SHBxR load cell is a fully-welded construction and water block cable entry ensures that it can be reliably used in tough environments found in food, chemical and process industries. For intrinsically safe and/or potentially explosive atmospheres the load cells are available with both local and international ATEX approval.

Contact INSTROTECH for more information: Tel: + 010 1595 1831 email: sales@instrotech.co.za

Efficient spillage solutions

OST-Africa's range of materials handling, screen and transmission products, includes an efficient spillage solution, designed to prevent production losses during materials handling in diverse sectors.

"This cost-efficient spillage system, which encompasses various products that operate together to form one highly efficient system, has important benefits over conventional systems which are labour intensive, costly to operate and require additional equipment," says Nolene Streicher, managing director, OST-Africa, part of the Engineering Solutions Group (ESG) of Invicta Holdings Limited.

"Advantages of the OST system include simple installation, modular components for extended service life of the system, reduced maintenance and a low cost solution to spillage problems."

The OST spillage system consists of a dynamic impact bed, the High Impact Torsion (HIT) system, the skirt clamp and skirt wing, impact zone panels, chute vibrators, duff feeders, primary and secondary belt scrapers and the bias plough.

The dynamic impact bed is a shock absorbing trough, which is mounted underneath a conveyor belt. It is installed at transfer points where fine or course heavy material is being transferred and where there is a build-up of materials in the transfer chute. The HIT system combines a heavy-duty idler frame with a high impact torsion arm system to absorb the impact of material which falls onto the belt.

The skirt clamp, which is the conveyor system's spillage controller, ensures that positive pressure is always applied to the side wall. The skirt wing is designed to support a conveyor belt between the idler and frames when sagging occurs, in order to prevent over-flow spillage.

OST impact zone panels are used at high impact points in transfer chutes which are continually put under high stress and therefore have the highest maintenance requirements. This impact zone panel absorbs impacts and high wear resistant liners ensure efficient operation and extended service life.

Chute vibrators prevent material blockage in a chute. Duff feeders, which accommodate the removal of dry or wet material from underneath belt scrapers down to collection points, also allow access for easy maintenance of conveyor rollers and belt scrapers.

The primary belt scraper blade tip is kept in positive contact with the belt surface while the secondary belt scraper is segmented from all scraper components, for extended service life. The bias plough prevents duff that remains on the belt from damaging the return pulley.

OST's materials handling product portfolio also includes the Grizzley Feeder System (GFS) which is custom made to suit each application. This mobile feeder system, which constantly controls the feed of product onto conveyor belts at a rate of up to 80 t/h, can be quickly and easily dismantled and relocated when necessary.

This system, which ensures optimum production, reduced wear and low maintenance, is also designed for no spillage.

Electrical panels for these feeders are fitted with manual and automatic switches, frequency inverters, overload switches, flexible vibration cables and a step- down transformer.

OST bulk handling systems are supported by OST-Africa's specialised design and installation team, which ensures these custom-built systems meet exact requirements in any application.

For further information contact: Chantelle Roelofse Tel: +27 (0) 12 803 7254 Fax : +27 (0) 12 803 7262 Email chantelle@ost-africa.co.za Web :https://ost-africa.co.za

Kwikspace announces shareholder buyout

Kwikspace CEO Dirk Steinberg

KWIKSPACE, Africa's largest supplier of manufactured and rented prefabricated buildings, has been purchased by private equity company AIH Limited, effective 1 September 2021.

AIH Limited is advised by Athena Capital, a Cape Town based private equity firm.

Kwikspace's executive team will invest alongside AIH Limited following completion of the buyout. The executive team will continue to lead the business, together with the new shareholders, in the next stage of the company's growth.

Kwikspace Chief Executive Officer Dirk Steinberg said: "Athena Capital has a proven track record of delivering positive returns for innovation-led businesses. They have extensive knowledge and experience of operating in local and international markets, and will provide Kwikspace with the institutional support to deliver on our strategic plans. Our current excellent operating and delivery standards will continue under the existing executive team, and we are planning to leverage our manufacturing capabilities and national rental fleet to grow our footprint in the coming years."

Kwikspace becomes the fifth company in Athena Capital's investment portfolio, joining Vida e Caffe (South Africa's largest independent coffee chain); fintech company Jumo; American technology company ComboCap; and Zibo Containers, SA's largest manufacturer of rigid PET thermoformed containers.

The Kwikspace executive team remains unchanged and its future shareholding will ensure full alignment with the new shareholders. "We remain perfectly positioned to provide our full service and product offering, ensuring our well-renown customer satisfaction approach remains unchanged," said Steinberg.

Athena Capital's approach is to partner with management teams where they remain aligned at both an operational and strategic level. Kwikspace remains a level 4 B-BBEE company.

"As part of the management structure, I can say that the entire executive team is excited to have AIH Limited on board as shareholders," Steinberg added. "We look forward to working with them as we focus on our upcoming expansion drive to cement us even further in our existing markets and open up new opportunities in untapped markets."

About Kwikspace

Kwikspace is one of Africa's largest manufacturers of prefabricated, modular buildings, with an established national footprint across the construction, mining, oil & gas, education, healthcare and community service sectors.

Established in 1972, the company employs over 300 people, with a 500 000 m^2 manufacturing facility in Kliprivier, Gauteng. Kwikspace maintains the largest modular building rental fleet in South Africa.

About AIH Limited / Athena Capital

Athena Capital is the sole advisor to AIH Limited, a Mauritian based private equity fund. In this capacity, Athena Capital sources and advises AIH on private equity transactions.

AIH takes a patient and considered approach to investing in early-stage, mid-market or strategic businesses exposed to the industrial, consumer and inclusive tech-enabled financial services sectors within Sub-Saharan Africa.

Deadly car crashes more likely during lockdown

By Jeff Grabmeier, The Ohio State University

WITH fewer people on the road during the early days of the pandemic, more drivers were speeding and driving recklessly, resulting in more crashes being deadly, a new study found.

Researchers at The Ohio State University conducted a detailed analysis of traffic in Franklin County, Ohio, which includes Columbus, from Feb. 1 to May 8, 2020—the period right before and after COVID-19 stay-at-home orders were instituted by the state governor.

While the total number of collisions declined after the lockdown, the proportion of those crashes that were incapacitating or fatal more than doubled, results showed.

"More of the crashes that did occur were severe, not just because of less congestion, but also because of drivers who were speeding, and driving under the influence of alcohol or drugs," said Jonathan Stiles, lead author of the study and a postdoctoral researcher in geography at Ohio State.

Pandemic driving also led to far fewer rear-end collisions and more single-vehicle crashes, findings revealed.

The study was published this week in the journal Transportation Research Record and will appear in a special issue on COVID-19.

The results reveal a disturbing fact about urban road design, said study co-author Harvey Miller, a professor of geography at Ohio State.

"This is more evidence that our streets are designed for speed, not safety," said Miller, who is also director of Ohio State's Center for Urban and Regional Analysis.

"What is keeping crashes from being more severe during normal times is higher volumes of traffic, and once traffic goes away, people speed and crashes have more serious consequences."

The researchers collected crash and traffic volume data for Franklin County from the Ohio Department of Public Safety.

They used information from INRIX, a private transportation data company, showing real-time speeds on various segments of major roads and highways in the county.

In addition to the real-time speeds, INRIX calculates a reference speed for each road segment, which is the average speed for that segment when there is no major traffic. It is normally close to the speed limit.

Stay-at-home policies were instituted in Ohio on March 15 and continued through the end of the study on May 8.

Traffic volumes declined by more than 60% while the stay-at-home order was in effect, the study showed. Vehicle crashes changed in type, time of day and severity when compared to both the period right before the lockdown, as well as the same 55-day period in 2019.

The good news is that crashes were much less frequent in Franklin County under the stay-at-home period, averaging only 24.4 per day compared to 75.8 in the prior year.

Collisions were also less prevalent during the morning and afternoon rush hours, compared to the same period in 2019.

Rear-end collisions accounted for only 19% of crashes during the lockdown, compared to 35.5% a year earlier, while the proportion of single-vehicle crashes nearly doubled, from 12.9% to 25.3%

"Rear-end collisions tend to occur when you have a lot of traffic on the roads and that's one thing we didn't have during this COVID-19 period," Stiles said.

"But there was a lot more speed. Single-vehicle crashes are something you would be more likely to see when a driver is traveling at high speed and loses control."

Crashes in which the reporting officer cited speeding as a factor nearly doubled under the stay-at-home orders compared to the previous year. In an earlier study, some of the same researchers found that speeding by drivers more than tripled in Columbus when comparing 2020 to pre-pandemic 2019.

In addition, more crashes during the lockdown were linked by police to alcohol and drug use.

And more speeding and drug and alcohol use meant more serious crashes. Results showed 3.3% of collisions during the lockdown period were incapacitating or fatal, compared to 1.5% the previous year.

"The odds of a serious crash were still relatively low, but those chances increased significantly with less traffic and higher speeds on the roads," said study co-author Armita Kar, a doctoral student in geography at Ohio State.

The results have implications for safety and equity, the researchers said.

One issue is that essential workers, who are often low-income and minorities, were the ones most likely to be on the road.

"These essential workers had to get to their jobs, so they are the ones who were exposed to the risk of more dangerous collisions," Miller said.

"Of course, sometimes the collisions were their own fault, but not always."

There's also the question of what do with roads if traffic volumes decline permanently because of more people working from home—or in the event of another emergency that keeps most people from driving.

"If there's less traffic, many of our roads may be wider than they have to be, which encourages speeding," Stiles said. "There's a safety tradeoff."

Cities should consider implementing proven strategies for slowing traffic, including having fewer lanes in metro areas, according to the researchers.

"We need to redesign streets and roads with safety in mind and not just speed," Miller said.

Engineered cyanobacteria uses electricity to turn carbon dioxide into fuel

By Bob Yirka, Tech Xplore

A combined team of researchers from the National Renewable Energy Laboratory and Miami University, has developed an engineering process that allows cyanobacteria to use electricity to turn carbon dioxide into ethylene or acetate. In their paper published in the journal Energy & Environmental Science, the group describes their technique and its possible use as an energy storage system.

As the researchers note, natural photosynthesis is an inefficient means for converting carbon dioxide to useful compounds for human purposes. In this new effort, the researchers have engineered part of the process to make it more efficient, and in so doing have developed a new way to store energy.

Scientists have divided natural photosynthesis into two main systems, photosystem I and photosystem II. Photosystem I involves the use of light to allow the transfer of electrons across a membrane. With photosystem II, enzymes capture photons that in turn energize electrons. The researchers noted that this system suffers from three main inefficiencies. The first is that the photosystems have overlapping absorption spectra.

The second is that the oxygen produced by photosystem II has to compete with carbon dioxide for the enzyme that fixes the carbon pathway. And finally, natural photosynthesis can only use light in a limited part of the solar spectrum.

To overcome these inefficiencies, the researchers engineered cyanobacteria (a type of bacteria that obtain energy via photosynthesis, aka blue-green algae) in a way that allowed them to use sunlight and a stream of electrons to drive carbon dioxide fixation. More specifically, they removed all of photosystem II and replaced it with an artificial system that worked by attaching the modified cells to an electrical circuit. They found that when the cells were exposed to light, the cyanobacteria were able to deliver electrons to photosystem I, which allowed for converting carbon dioxide to useful fuels such as ethylene or acetate.

The researchers note that if a renewable resource was used as the source of the electricity, the system could be used as a means of energy storage. And, the greenhouse gas carbon dioxide could be used to produce greener fuels. More work is required, however, to find out how well the system could be scaled up to useful levels.

IN THE NEXT ISSUE:

- Alternative Power, Offgrid Power & Renewable Energy Solutions
- Automotive & Transport
- Boilers / Burners / Combustion Technology
- Building & Construction
- Filters & Filtration
- Financial Services
- Fishing Industry
- Fleet Management / Servicing & Maintenance
- Flooring & Handrailing
- Heavy Lifting, Rigging Sling & Chain
- Hydraulics / Pneumatics & Fluid Control
- Lighting & Illuminating
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Cheers! A toast to democracy!

OPINION

ON THE CONTRARY

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

Pieter Schoombee

"CADRE deployment is the original sin in ANC corruption and delivery failure," declared Bob the Book, "it's the opposite of Robin Hood: steal from the poor and give to the rich cadres."

"It is deeply undemocratic," agreed Stevie the Poet: "give the people's votes to the deployment commissars. Cadre deployment is the mother of much evil in our country."

"And yet President Ramaphosa pleaded with Judge Zondo not to touch it," gesticulated The Prof with his unlit pipe.

"Makes you think …"

"Makes you drink!" confirmed Luke the Dude, "any chance of a beer in this house?"

The confederacy of convivial conversationalists was contemplating the municipal elections, gathered as we were around the fire at the local Grill and Garden to, as per habit, solve the pressing issues of our town and the world. "Coming up!" assured the Chief as she marshalled her waitering troops.

"Well …" tried Big Ben, "President Ramaphosa openly admitted that mistakes had been made and promised the ANC would correct them."

"Merde!" muttered Jean-Jay. "Mistakes and promises! State capture, it is not a mistake, it is grand corruption. And promises will not return the stolen billions. This president, he has better manners but he is much the same as that Count Zuma. Five years he was the Count's deputy, don't forget!"

"Uhm, what do you mean 'Count Zuma' Jean-Jay," wondered Miss Lily.

"Maybe I just remind," twinkled Jean-Jay, "that he can't count to eleventy, that one."

The Prof changed the subject: "Well now is the time to do something about it. On November 1 we get our say at the ballot box. We know what the ANC, the EFF and their cadres did. However, the IFP, the ACDP and others opposed the disgrace. The DA and the Freedom Front have been fighting it vigorously throughout."

"Okayyyy," said Luke the Dude in a tone I did not trust, "so we agree that the Democratic Alliance has been on the front line of the battle against cadre deployment, do we?"

"Of course!" jumped in Bob the Book. "Federal chairman Helen Zille always outspokenly so. Party leader John Steenhuisen led the charge after the disastrous reign of ANC Litey Mmusi Maimane. 'No more ANC Lite'! Steenhuisen calls out cadre deployment as the 'genesis of state capture'."

"Right," cross-examined Adv. Lucas the Dude. "If that is the position of the DA, why does the local Democratic Alliance commit cadre deployment in our ward?"

Just to fill you in during the silence that followed, our formerly self-governing town forms a ward in the current dispensation of larger municipal authorities.

Colin the Golfer spoke up. "Oi, Boyo," said he. "What railway bus dropped you here? Mind filling the rest of us in?"

"It would be my pleasure, sir," charmed Luke the Dude. "Let's begin at the beginning, shall we? We've had our current councillor for the past five years, since the last election. Anybody here unhappy with him?"

Nobody was.

"On the contrary," nodded Stevie the Poet, "our current representative is responsive, pro-active and keeps everybody in the loop who wants to be. Improvements seen at the beach and the tidal pools; sewage leaks and potholes fixed; the caravan park being rescued from previous neglect; I can go on."

"A very busy man then, eh Boyo?" grinned Colin the Golfer.

"Let me tell you," asserted Luke the Dude, "the more he sorted the problems left by The Invisible One the DA had parachuted in from outside, the lighter the load and the better our town. And he still has a table at our regular Saturday Markie, available in person to anyone wishing to speak to their councillor."

"That's admirable," nodded The Prof, "I didn't know that."

"So what's the problem?" frowned Miss Lily.

"Good question," smiled Luke, "before I answer you, is anyone here not happy with our councillor?" Nobody was.

"Right," said Luke, now serious: "The problem is this, why is he not our candidate in this election?"

"What do you mean?" frowned Colin, "wasn't it his decision?"

"No. He was shocked by it." Luke was angry. "The DA cadre deployment commissariat connived behind his back and behind our backs, us, the people of our town, to parachute in another cadre from a different town. This time they are deploying from their own inner circle at Town Hall – a municipal official working closely with the mayor and councillors.

"You, voters, you will do as you're told. And if you don't turn up in numbers to vote, your guy will not even be a proportional representative. They threatened as much at the meeting called after some of us protested."

"Yep, I was there," growled Bill the Beard. "What struck me was the disrespect and arrogance. They know better than us what's good for us. The cadre who is our constituency head – I don't know his name; never seen him before – had the nerve to intimate that we were the culprits.

"Never known such a thing in the DA," grumbled he, that people come after a decision and disagree with it. What the DA does, is take a decision and then everybody supports it whether they like it or not: the 'majority' has spoken.

"What majority? He had no awareness that the voters he was insulting had been excluded from an important matter affecting us directly. Is this democracy in action?"

"So what are you going to do?" worried The Prof, "we can't risk an ANC government."

"No reasonable person would disagree," reasserted Stevie the Poet, "in risky municipalities, no luxury of a protest vote. Here, the DA will govern regardless."

"We were left no time to organise and register," frowned Luke. "Heaven knows, we need an independent voice in our council to keep the others real. For now we have three choices: vote DA on two ballots but vote for another ward councillor; vote for the Freedom Front or ACDP on all ballots; or avoid the queue – have a braai and a beer instead. Cheers!"

And so we drank a toast to democracy. Yes, it had a bitter taste.

E-Mail: noag@maxitec.co.za

Smartphone sensor data has potential to detect cannabis intoxication

By Rutgers University

A smartphone sensor, much like what is used in GPS systems, might be a way to determine whether or not someone is intoxicated after consuming marijuana, according to a new study by the Rutgers Institute for Health, Health Care Policy and Aging Research.

According to the study, published in Drug and Alcohol Dependence, which evaluated the feasibility of using smartphone sensor data to identify episodes of cannabis intoxication in the natural environment, a combination of time features (tracking the time of day and day of week) and smartphone sensor data had a 90 percent rate of accuracy.

"Using the sensors in a person's phone, we might be able to detect when a person might be experiencing cannabis intoxication and deliver a brief intervention when and where it might have the most impact to reduce cannabis-related harm," said corresponding author, Tammy Chung, professor of psychiatry and director of the Center for Population Behavioural Health at the Rutgers Institute for Health, Health Care Policy and Aging Research.

Cannabis intoxication has been associated with slowed response time, affecting performance at work or school or impairing driving behaviour leading to injuries or fatalities. Existing detection measures, such as blood, urine or saliva tests, have limitations as indicators of cannabis intoxication and cannabis-related impairment in daily life.

The researchers analysed daily data collected from young adults who reported cannabis use at least twice per week. They examined phone surveys, self-initiated reports of cannabis use, and continuous phone sensor data to determine the importance of time of day and day of week in detecting use and identified which phone sensors are most useful in detecting self-reported cannabis intoxication.

They found that time of day and day of week had 60 percent accuracy in detecting self-reporting of cannabis intoxication and the combination of time features and smartphone sensor data had 90 percent accuracy in detecting cannabis intoxication.

Travel patterns from GPS data—at times when they reported feeling high—and movement data from accelerometer that detects different motions, were the most important phone sensor features for detection of self-reported cannabis intoxication.

Researchers used low burden methods (tracking time of day and day of week and analyzing phone sensor data) to detect intoxication in daily life and found that the feasibility of using phone sensors to detect subjective intoxication from cannabis consumption is strong.

Future research should investigate the performance of the algorithm in classifying intoxicated versus not intoxicated reports in those who use cannabis less frequently. Researchers should study reports of intoxication using tools that law enforcement might use showing a stronger correlation with self-reported cannabis use.

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