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Afrimat adds phosphate and rare earths to an already diversified product offering

Andries van Heerden.

AFRIMAT, the open-pit mining company providing industrial minerals, bulk commodities, and construction materials, has announced another acquisition, this time in the phosphate and rare earth minerals space, through the acquisition of Glenover Phosphate (Pty) Ltd ("Glenover") for a total purchase consideration of R550 million, consisting of R250 million for the assets and an option, at Afrimat's sole discretion, to purchase 100% of Glenover's shares for R300 million.

According to Afrimat's CEO, Andries van Heerden, Glenover is located 90km northwest of Thabazimbi in the Limpopo Province. "Current reserves of phosphate, vermiculite and rare earth elements provide for a resource life of more than 20 years. Afrimat will obtain the inventory deposits of historically-mined resources and extend the life of project by acquiring the remaining in situ resource."

Van Heerden added that this acquisition would further expand the Group's offerings in line with its diversification strategy. "The application of these minerals is vast. Phosphates are used in fertilisers and rare earth elements are used in many applications, one of which is for magnets in electric motors. The international trend towards electric vehicles is expected to be a big demand driver for this application in future. Vermiculite is used in the construction of fire retardant partitioning boards, and in horticulture as a growth medium, as well as in animal feed and other industrial applications."

He went on to say that Glenover would also expand Afrimat's product portfolio beyond the ferrous metals value chain by providing a multi-commodity product that addresses fundamental needs and trends, including those in the agriculture and food industry, as well as in new technology applications.

"This transaction provides the Group with a new platform for growth while at the same time reducing cyclicality. Phosphate, vermiculite and rare earth minerals will also widen our international geographic market footprint."

The acquisition further bolsters Afrimat's commitment to the South African economy, enabling job creation, skills transfer and training, food security, social upliftment in surrounding communities, and ensuring South Africa is a player on the world stage for minerals used in future technology applications.

Commenting on the timing of the transaction, van Heerden said that Afrimat is currently debt-free and is experiencing strong operational cash flow, adding that the Coza Mining (Pty) Ltd ("Jenkins") and Nkomati Anthracite (Pty) Ltd ("Nkomati") projects have been successfully implemented and are providing good additional contributions.

"This, combined with the Group's strong execution capacity creates the opportunity for accelerated growth."

In addition to Glenover, Afrimat is busy with the optimisation and implementation planning of the recently acquired Gravenhage Manganese mine. "This dedicated project team is planning to commence mining operations as soon as all the statutory approvals have been received and the business plan is approved."

On 12 November 2021, Afrimat also acquired the shares in Agri Lime (Pty) Ltd and associated assets for a purchase consideration of R63 million. Van Heerden said that through acquiring Agri Lime, a feedlime producer, Afrimat's footprint in the agricultural lime market has been strengthened as part of the growth strategy of the Industrial Minerals segment of the business.

He concluded that these exciting developments and new acquisitions were planned in accordance with the Group's significant cash generation. "Afrimat will, as always, ensure that execution on these projects is undertaken with the precision and the cautiousness for which we are known."

African products for African mines

Typical 10-ton overhead crane.

CONDRA has announced that it is to supply six cranes, one portal and five double-girder overhead machines, to a South African mine belonging to an unnamed mining house.

Delivery of the cranes will satisfy three separate orders placed consecutively in September, the same month that Condra commissioned a large, custom-designed jib crane for consultants contracted to the same customer. The mining house has been operating Condra overhead cranes and hoists since the late 1990s, employing them in a spread of mines and applications across west and southern Africa.

Of the six cranes ordered, four are identical 10-ton overhead machines with spans of 6,5 metres, and two have already been delivered. The first was installed underground and commissioned on November 24 for maintenance duty on pumps, motors and other equipment. The remaining two 10-ton cranes will be completed this year to join the third on site early in 2022.

A fifth crane, a 15-ton portal machine, is earmarked for receiving and dispatch duties, while the biggest of the six cranes ordered will be a 25-ton electric overhead travelling workshop unit.

Condra's tenders for the three orders proved successful against multi-company competition. Their prices were not the lowest, supporting growing evidence of a trend toward buyers valuing lower overall lifetime costs over price, these lower costs being achieved through supplier commitment and an

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CBD property market sees uptick

INVESTMENT into Cape Town's CBD property market seems to be enjoying the first signs of post-pandemic optimism, with buyers keen to get in on the action, notably in the buy-to-let space. Justin van der Poel, investment consultant at Flyt Property Investments who are currently marketing units at One Thibault off Long Street, says that the sales team has been pleasantly surprised at the interest and closing rate of units in the development.

The firm initially offered units to investors via their popular Section 12J Flyt Select fund, which accounted for the majority of sales, but van der Poel says that the units have been popular since the expiry of SARS's Section 12J tax incentive.

With currently as many as six new developments or refurbished buildings on offer in Cape Town's CBD, Property Fund Manager Ryan Flowers says that the success at One Thibault can be attributed to the competitive selling prices and Flyt's offering. "We could definitely say that the view has a lot to do with it, but our product offering at One Thibault is extremely attractive to investors," he explains. Flyt have stuck to their Section 12J hospitality structure, with investment into One Thibault wrapped with on-site hospitality management company, WINK ApartHotels, taking care of rental management and administration. Entry level into their studio apartments kicks off at R895 000 where an expected rental return on Investment of 6-7%.

Residential apartments, which start from the fifteenth floor of the historic building, are almost complete and studio, one- and two-bedroom units are available for viewing. The property has been designed to include co-working space, laundry facilities, an on-site restaurant, a swimming pool and roof deck, reception and concierge as well as storage space, parking and high-speed internet.

R1.25m pledge to *Caring4Girls* initiative

ENGEN and Caring4Girls visited Intsebenziswano Secondary School in Philippi recently, distributing hygiene hampers to 834 learners, ensuring that no school days are missed due to monthly cycles, especially in the build up to the year-end exams.

Courtesy of a R1.25m investment by Engen, 18 084 learners at 37 schools across all nine provinces have received feminine hygiene support to ensure that they approach their monthly cycles with confidence and dignity.

Caring4Girls was founded in response to millions of South African girls missing a significant number of school days per year, or dropping out of school completely, due to feminine hygiene issues.

The initiative provides sanitary packs as well as education around reproductive health.

"We cannot thrive as an inclusive society if some learners are marginalised because they are unable to attend school due to feminine hygiene issues, which is why Engen is proud to once again partner with the Imbumba Foundation and contribute to the meaningful Caring4Girls initiative," says Engen Managing Director and CEO, Yusa' Hassan.

Research shows that underprivileged girls in many parts of South Africa miss up to 50 days of school per year due to inaccessible feminine hygiene care.

Imbumba Foundation CEO, Richard Mabaso says that in addition to distributing sanitary towels amongst female learners, Caring4Girls also creates a voice for them.

"Caring4Girls provides health education on puberty and adolescence, demystifies menstrual related

myths and breaks down societal taboos, whilst promoting positive body literacy and autonomy, as well as gender equality," he adds.

Mabaso acknowledged Engen for the compassion it has shown towards young girls and for making a generous contribution towards the initiative.

"In line with the UN's Sustainable Development Goal (SDG) 4, Education is a key enabler to transform lives, which is why we at Engen are passionate about the Caring4Girls initiative because it will help uplift and empower female learners through education to reach their full potential.

"By supporting these young girls, we will ensure that that they do not miss school because of their monthly cycles."

Caring4Girls is endorsed by the Department of Basic Education and focuses on education and training on puberty and menstrual hygiene management, including the safe and environmentally responsible handling, usage and disposal of sanitary towels.

Zeder sells TLG

PSG aligned investment company Zeder has sold its 98.22% stake The Logistics Group (TLG) - the old terminals arm of the fruit marketing giant Capespan – for R1.57 billion.

In October CBN reported how TLG - which comprises terminal services and warehousing facilities, an integrated suite of logistical solutions, stevedoring facilities, clearing and forwarding as well as digital technology solutions - had performed admirably in the six months to end June with a massive increase in recurring earnings to R90 million.

The deal is not surprising since Zeder had advised that it was entertaining offers on a number of its portfolio holdings.

But some observers have questioned whether Zeder has extracted full value for its holding in TLG, which was valued at R1.4 billion at the end of June. Zeder worked tirelessly to sharpen TLG's services offering, and build a diversified logistics player with strong operational niches.

The buyer of Zeder's stake in TLG is Newlands-based African Infrastructure Investment Managers (AIIM).

AIIM holds various wind and solar power farms as well as stake in ACSA (Airports Company of SA), power generation, telecoms and fibre optic cabling.

Manufacturing sector facing a 'stop-start' recovery

RISKS related to the fourth wave of the Covid-19 pandemic and uncertainty regarding load shedding continue to weigh on local manufacturers, despite positive news regarding domestic and export sales volumes as well as fixed investment levels, the Q4 Absa Manufacturing Survey shows.

Overall, business confidence dipped by three points to 38 during the quarter, the second consecutive quarterly decline.

Said Justin Schmidt, Head of Manufacturing Sector at Absa Retail and Business Bank; "It is not surprising, given the uncertainty around the current economic situation, that manufacturers are feeling concerned about the future."

The quarterly survey, which covers approximately 700 businesspeople in the manufacturing sector, was conducted by the Bureau for Economic Research (BER) at Stellenbosch University between 27 October and 15 November 2021. The confidence index ranges between zero and 100, with zero reflecting an extreme lack of confidence and 100 extreme confidence where all participants are satisfied with current business conditions.

According to the survey, the majority of manufacturers are feeling pessimistic about the future, with expectations regarding business conditions for the next 12 months decreasing by 12 points. "The risks surrounding the fourth wave of Covid-19, water shortages across provinces, continued load shedding at a heightened level of intensity, as well as the recent industrial action in the steel industry, have contributed to the negative outlook," noted Schmidt.

The indicators for levels of raw material stocks relative to planned production and the level of finished goods stock relative to expected demand declined by 14 points and 5 points respectively after an improvement in the third quarter. The indicator for total cost per production unit increased by 10 points to 81 during the fourth quarter – the highest level since the third quarter of 2008.

"The shortage of raw materials and load shedding were two of the main factors behind the increase in production costs," said Schmidt. "Plastic and steel prices, as well as the cost of transport (fuel prices and the cost of containers), were the major contributors to cost increases."

Positively, manufacturers did not only see an improvement in their volume of domestic and export sales, but also saw a significant increase in their domestic and export selling prices. The indicator for domestic prices increased by 19 points compared to the previous quarter while the export price indicator increased by 27 points to 50 points, the highest level since the first quarter of 2002. Additionally, the manufacturing fixed investment indicator moved back into net positive terrain, increasing 10 points compared to the third quarter.

Leisure property: gains and strains

THE recovery of the leisure and tourism sector - laid low for many months by Covid-19 - will be key to a robust Western Cape economy in 2022.

While official statistics probably don't present an encouraging story, there are signs from several listed companies that the broader leisure sector that is on the mend. But for every gain there is a strain...

Trematon, an investment company, recently reported an increase in its valuation of its holding in Club Mykonos Langebaan (CML) - the sprawling leisure property on the West Coast. The group reported that CML was profitable and cash generative in the year to end August 2021.

Trematon also said it would consider developing under-utilised land components at CML.

Trematon CEO Arnie Shapiro noted that during the past financial year the group had commissioned several incremental projects that would improve the operating efficiencies and guest facilities at the resort "in anticipation of a return to higher occupancies with the lifting of most Covid-related restrictions on the hospitality industry".

Tsogo Sun Hotels, one of the biggest hotel operators in Africa, disclosed that it had eked a profit from its Western Cape operations. The group - which owns the Cape Sun, Arabella, The Cullinan and Southern Sun Newlands and the Beacon Isle in Plettenberg Bay - reported revenue of R202 million and earnings of R4 million from its Western Cape operations for the half year to end August.

Occupancies were helped by accommodation provided to students stranded by the fires in Cape Town during April 2021 and the Cape Town leg of the Castle Lager Lions Series rugby tour.

The Lions Tour was a real challenge for Tsogo. The group revealed that it earned revenue of R64 million from the tour - but staff needed to stay in-house in a bio-bubble for weeks, work long hours and cater to complicated tour requirements.

But a key development in Tsogo's Western Cape portfolio was that Marriott International plc vacated the Protea Hotel Victoria Junction in mid-October 2021. The group has since closed the hotel and plans to re-open it as a Garden Court in 2022.

Western Cape focused property group Spear reported that its flagship leisure property, 15 on Orange re-opened in mid-August under the Capital Hotels & Apartments brand. The new arrangement sees a triple net fixed-income lease in place, and Spear reckoned the entrepreneurial approach adopted by the new operator was already bearing fruit as positive rooms, conferencing and F&B activity was evident across the property.

Spear's DoubleTree by Hilton in Cape Town had also shown marginal operational improvements with the group reporting certain international travel markets, domestic leisure and business markets had returned along with growing small meetings and conference events.

Image credit: Harper's Bazaar.

Still Spear has opted to sell the Upper East Side Hotel (UES) business, which is the owner and operator of the DoubleTree by Hilton Hotel for almost R46 million. Spear said the sale was in line with management's road map to reduce Spear's loan-to-value (LTV) and was part of the strategy to exit its hospitality assets in the short to medium term.

Interestingly Spear disclosed that the value of the net assets attributable UES was around R49 million, but the unaudited loss after tax attributable to the business for the six months ended August was a hefty R61.6 million.

Elandsfontein starts rocking

NUTRIENT producer Kropz Plc reckons it will see the first phosphate rock exports from its Elandsfontein project, on the West Coast, in the first quarter of this year.

This is great news as the project initially suffered some frustrating setbacks setbacks. In a recent update Kropz said it had made significant progress towards commissioning production at Elandsfontein - indicating the project schedule was tight but in track and within the original capital budget.

> "The company confirmed earthworks and civil construction were already complete..."

Phosphates are a key ingredient in fertilisers.

Kropz said Elandsfontein site activities were currently split between finalising the piping installation and the electrical, control and instrumentation installation as well as early commissioning activities. The company confirmed earthworks and civil construction were already complete, while the fabrication and erection of structural steel, platework and piping were also complete with mechanical equipment installed.

Kropz said pre-commissioning activities were advancing well. These entailed testing signals from field instrumentation to the operating system, testing input/output signals for instruments and direction testing of electrical drives.

Transnet has provided the company with a draft port access agreement to support the long-term export of Elandsfontein's phosphate rock through the port of Saldanha. Kropz said exports through Cape Town would only be required for a maximum of 30% of Elandsfontein's export production of approximately one million tons per annum...and only if capacity through Saldanha is unavailable for a period of time.

RFG bulks up despite small 'shock'

RFG, the Groot Drakenstein-based food producer, will continue to evaluate opportunities for strategic bolt-on acquisitions and has also earmarked capital expenditure of R200 million for the 2022 financial year.

That's the word from new CEO Pieter Hanekom, speaking at the release of year to end September financial results. He reckoned the gradual normalisation of the economy and the momentum of the Covid-19 vaccination roll-out were positive for consumer spending and should contribute to stronger organic growth and increased brand shares in the new financial year.

RFG plies its trade in the fruit juice, jams, canned fruit, canned meat, pies and spices segments. In the year to end September RFG reported revenue up by 1.5% to R6 billion - a decent top line performance after a 3.4% decline in the first six months. Hanekom said the turnaround was driven mainly by a recovery in fruit juice and international canned fruit volumes. Bottom line profits were up 1,4% to R230 million.

Image credit: Just Food.

Hanekom said international demand for the Group's canned fruit products remains strong and exports are being expanded to new markets. He added that international volumes were expected to recover as the shipping backlog reduced over the next 12 to 18 months - which should contribute to RFG's inventory returning to normalised levels.

It will be interesting to see which niches RFG targets for acquisitions. The last deal was for Pioneer Foods' Today frozen pie business (effective from next month), and gave RFG access to the top end retail channel. Today is expected to chip into RFG's operating profit in the second half of the 2022 financial year.

Interestingly, the 2021 financial results included a small shock in form of an abnormal adjustment of R27 million for prior year electricity costs. Hanekom said the matter arose from the increased power capacity supplied to the Groot Drakenstein production hub following the upgrade and expansion of the site in the 2019 financial year.

"In 2021 management identified that the company was possibly being undercharged for electricity consumption and engaged with the local authority on the matter. At the same time management took the prudent decision to raise a provision to cover possible arrear charges for six months, the maximum period allowed for arrear billings by the local authority, based on legal advice sought by the company at the time."

In November 2021 the local authority notified RFG of incorrect billings amounting to R39 million, covering the arrear expenses for the period since 2019. RFG sought a second legal opinion which confirmed that the local authority was now entitled to claim arrear charges for a maximum of 36 months.

Hanekom said the amount of R39 million included R10 million for the 2019 financial year, R17 million for the 2020 financial year and R12 million for the 2021 financial year.

Customised and plant-specific training across Africa

AS Africa's largest hydraulics, pneumatics and automation company, Bosch Rexroth South Africa is committed to upskilling personnel with its training courses. These Continuous Professional Development (CPD) Validation and MerSETA accredited training courses are available at the Group's training facilities based in Kempton Park, Johannesburg. Recognising that not all processes require the same type of training, the company also offers system-specific and plant-specific training at the clients' premises throughout Africa.

This customer-specific training covers topics such as: component functionality and working principles, routine maintenance, systematic and common fault finding and practical equipment training. Post-training, staff are equipped to safely carry out daily checks, planned maintenance, repairs, systematic fault find and troubleshoot systems.

"We will often meet with customers prior to training to fully grasp their processes and meet their specific requirements, analyse drawings and possibly organise a site visit. When we dive into the specific requirements per plant, trained customer employees become comfortable and confident to safely deliver maintenance and repairs in their respective working environments." explains Arthur Sanderson, Bosch Rexroth South Africa Group of Companies Training Facilitator. "For example, in 2019 we manufactured and installed a custom pneumatic training rig for Nairobi Bottlers Ltd, the Kenyan base for Coca-Cola East Africa.

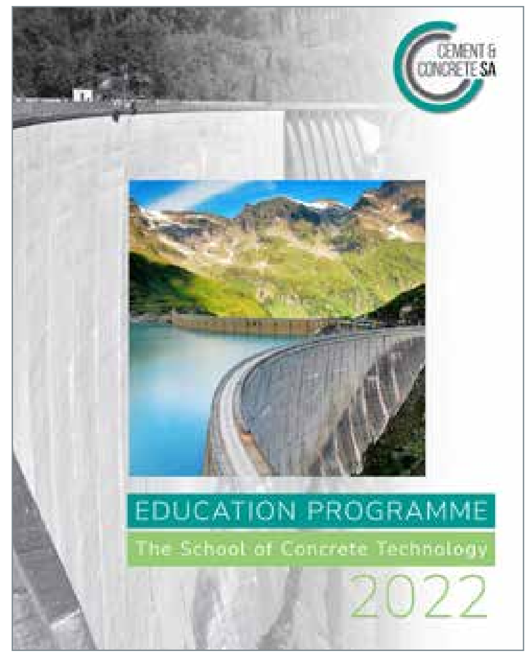
This was shortly followed by a three-module, plant-specific training course for Coca-Cola East Africa's technical personnel." Sanderson concludes.

The Bosch Rexroth South Africa training department is highly equipped for this form of training, as it has achieved CPD verification from the South African Institute of Mechanical Engineering. The Bosch Rexroth South Africa Group of Companies is able to provide comprehensive training solutions onsite on request, across Africa.

SCT training programme for 2022

THE construction industry's New Year resolution for 2022 should be to budget for staff training to gain a competitive edge when, hopefully, work volumes increase again in line with the Government's infrastructural development plans, and the disruptive effects of the pandemic subside, John Roxburgh, senior lecturer at the School of Concrete Technology (SCT), has urged.

The 2022 Training Programme of the SCT, a division of Cement & Concrete South Africa (CCSA), has been completed and is now available.



Roxburgh says SCT is optimistic about 2022 and sees it as a year of opportunity as, hopefully, the Covid-19 pandemic will start dissipating and the South African economy starts to grow again. The SCT will continue to run its successful online e-learning courses in 2022 but also hopes to return to classroom-based lecture courses, providing Covid-19 lockdown restrictions permit, and prevailing infection rates are low enough.

"The live classes will be kept small and high demand for any specific course dealt with by scheduling more courses. However, the online platform and self-study courses are here to stay as they align themselves with modern trends in terms of remote learning and increased access to both data and smart delivery devices. E-learning and its associated benefits will form an integral part of SCT training in future," he adds.

The universally-acclaimed Advanced Concrete Technology (SCT50) programme will in 2022 be run by SCT on a modularised self-study basis.

Roxburgh has urged the construction industry to invest in training in 2022.

"Concrete work on site is a major cost component in construction contracts. With trained staff – competent in all relevant aspects of concrete practice – contracts could be carried out more economically and quicker with fewer costly site errors and need for repairs and damage to reputations. Trained staff give construction companies the edge and 2022, especially, promises to separate the men from the boys when it comes to winning tenders. Spending money now on training by the School is an investment in the future of any company.

"South Africa urgently needs competent concrete practitioners and sales specialists in admixtures, construction chemicals, ready mix concrete, precast concrete, concrete repairs, cement production, aggregate production, testing laboratories and mining sector, to name just a few potential careers.

"In fact, a good education in concrete technology can lead to a rewarding career in all concrete-related industries with the potential of starting your own business. The long-established SCT has for decades provided trusted concrete technology education with a progression of courses that allow students to join at a level that matches personal competency. There can be no short cuts to becoming a good concrete technology practitioner and the SCT has all the educational requirements to help you meet all goals," Roxburgh adds.

Successful students for all SCTs courses receive certificates of attendance/competence and Continuing Professional Development (CPD) points are awarded on selected courses.

Generation X-factor

WESTERN CAPE-based private school business Generation Education has grown revenue by an impressive 60% to R138.5 million in the year to end August.

The fast growing business is now valued at close to R420 million, and ranks as investment company Trematon's biggest single holding (representing almost 40% of the R1.1 billion portfolio).This is a brisk value build from a business that Trematon helped to start from scratch in 2016.

Trematon chairman Robin Lockhart-Ross said GenEd's growth had led the group to the conclude that that the most appropriate avenues for application of available capital over the next few years will continue to be in the expansion of the private schools business.

He said that investment would feed ongoing growth in the number or scale of the GenEd school campuses, through strategic partnerships or through opportunistic acquisitions in the EduTech arena.

Lockhart-Ross pointed out that more than a third of Trematon's turnover at year-end was attributable to education. "The rapid expansion of the brick-and-mortar education business and significant development spending on EduTech operations has delayed full profitability, but the group is rapidly maturing and is cash flow positive at an operational level..."

GenEd now boasts six campuses in and around Cape Town - including Imhoff (near Kommetjie), Sunningdale, Blue Moon (Heathfield), Somerset West (the site of the old Reddam School), Melkbos, Sandown (near Milnerton) and Hermanus. Another campus is awaiting development in Noordhoek.

New Cape Town initiative bolsters economic recovery

TO support local businesses across the board, from one-person SMMEs to corporates, a number of key public, private and NPO stakeholders are joining forces to initiate a "Made in Cape Town" movement that will surface and celebrate products and services of a Cape Town origin.

The "Made in Cape Town" movement is managed by the Craft and Design Institute (CDI) in partnership with the City of Cape Town's Enterprise and Investment Department. It aims to demonstrate the strength of what can be achieved when public and private entities come together to support the reopening of the economy.

"The primary goal at this stage," says Erica Elk, Group CEO of the CDI, "is to unearth and showcase what Cape Town has created. And to encourage locals to support local.

"The 'Made in Cape Town' movement provides the CDI with an additional channel to connect local businesses with economic opportunities that will help them recover. It speaks to the objectives of several of our other projects, one being the RE:SOLVE Challenge which enables innovative entrepreneurs to take their first steps in prototyping new local products and services."

Elk elaborates: "Through 'Made in Cape Town' we are calling on the public and local businesses to tell us what excites them about Cape Town: is it a locally made product? A food or beverage they associate with the Mother City, or an invention or company that was born here? A unique service, event or adventure? The list of possibilities is endless!"

The initiative is going public ahead of the festive season to drive interest throughout the season and beyond, with "Made in Cape Town" calling for public input via a variety of social media platforms, namely Facebook (@MadeNCapeTown) and Instagram (madeincapetown).

"The 'Made in Cape Town' message amplifies the City of Cape Town's own economic initiatives to boost the economy out of the lockdown and galvanise both local businesses and supporters within all Cape Town communities," says Alderman James Vos, the City's Mayoral Committee Member for Economic Opportunities and Asset Management.

"In just the past month, the City has launched a number of programmes to drive our economy. We recently announced a 200-step Inclusive Economic Growth Strategy (IEGS) to make opportunities more accessible for all who live in Cape Town and, in particular, create jobs," says Alderman Vos. Other recent City of Cape Town initiatives have included detailed destination readiness plans which highlight how the city is preparing to safely welcome visitors over the festive season. This ties into Cape Town Tourism's (CTT) new international "Find Your Freedom" campaign, which converts potential travellers in key source markets to actual visitors to the Mother City, and CTT's "Captivating Cape Town" campaign showing the accessibility and affordability of Cape Town.

The first private sector entity to pledge its support for the "Made in Cape Town" movement is the V&A Waterfront who, with the CDI, is currently implementing a Retail Readiness Living Lab (RRLL) programme. Supporting small creative businesses in the Watershed, RRLL provides training and mentorship to foster retail expertise and readiness as the economy reopens. Currently, craft producers located at designer/artist Heath Nash's "Our Workshop" at the Gugu S'Thebe Centre in Langa are participating and benefitting from the opportunities being offered in the RRLL programme.

For more info on the "Made in Cape Town" movement contact: Carola Koblitz, Campaign Lead, "Made in Cape Town" Email: carola@madeincapetown.org

African products for African mines

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ability to deliver ongoing, reasonably priced after-sales service and maintenance.

A similar trend can also be seen in the market for second-hand cranes, where almost-new machines manufactured by companies unable to deliver effective maintenance lose value faster than much older cranes from more reputable firms.

"If a crane cannot be maintained, then it has no long-term value," explained Condra managing director Marc Kleiner, commenting on the six-machine orders.

"Some brands carry risk of rapidly escalating maintenance costs after the guarantee period. Project consultants are not liable for these after the warranty expires, so when a customer needs service at the end of that time, he sometimes finds the cost higher than projected.

"Our customers face no such doubts."

Typical 10-ton overhead crane.

Kleiner emphasised that Condra continues to be prepared and ready to support African mining:

"We have been supplying cranes to meet mining's needs for fifty years. We manufacture our cranes locally, and our supplier network – the people who make our gears, our wheels and other complex parts – they are also local.

"So we are an African company with a lot of experience of the different climatic and working conditions found on this continent. We are committed to and ready for any type of mining, manufacturing or machine servicing requirement from any African customer anywhere on the continent," Kleiner said.

The six cranes for the mining house are machines of standard design, fitted out to customer specification. Remotely controlled, there are pendants for alternative manual control. The cranes also feature floodlights to aid operation, and bulkhead lights for safety on all walkways. Other safety fittings include flame-proofing of brakes and electric panels to IP65 standard, and weather-canopies over all motors. Flashing lights and sirens warn when the cranes are in motion.

Kleiner is hopeful of further orders from this and other mining customers early next year, with Condra having tendered for a number of overhead cranes and specialised machines such as the recent jib crane.

"We continue to manufacture what we believe are the best cranes and hoists for African conditions," he said. "Condra strives for a reputation as the go-to company for the continenimes."

TWK 1st company listed on the CTSE to secondary list on A2X

IN a first for South Africa, TWK Investments (TWK), which recently listed on the Cape Town Stock Exchange (CTSE), will also list its shares for trade on A2X Markets. The collaboration between these two exchanges means that listed companies, for the first time, will be able to choose how to access both the retail and wholesale markets in South Africa.

The business has been approved for secondary listing on A2X Markets and its shares will be available for trade on A2X from 30 November 2021.

TWK retains its listing on the CTSE and its issued share capital will be unaffected by its secondary listing on A2X. It has a market cap of around R1,4 billion.

TWK is a diversified group of companies operating in the agriculture, forestry, grain, financial services and motor and tyre industries that deliver value-adding products and services to agricultural and related industries. The company operates over a wide geographic area across South Africa and forms a crucial component in the agricultural value chain which includes research, sustainable farming practices and agricultural innovation.

TWK CFO Eddie Fivaz said, "TWK is excited about the opportunity to complement our listing on the CTSE with a listing on A2X. We see this secondary listing as an opportunity to attract potential new investors, grow liquidity in our shares and broaden our shareholder base."

Kevin Brady, CEO of A2X Markets commented, "TWK's listing on A2X is an important milestone for the stock exchange industry. Not only does it provide TWK with a platform to access the institutional asset management market but it will be the first cross listing in SA between two alternative exchanges. For the first time, a company looking to list can consider an alternative exchange and gain access to both retail and wholesale markets." Brady added that TWK is the first company from the agricultural sector to list on A2X.

TWK's listing on 30 November will bring the number of instruments available for trade on A2X to 57 with a combined market capitalisation of about R5 trillion. TWK joins other well-known companies which have a secondary listing on A2X, including Investec, Naspers, Prosus, Sanlam, Sasol, Aspen Pharmacare, Exxaro, AVI, Mr Price, Growthpoint, Momentum Metropolitan and Tiger Brands.

A2X has listings from many key sectors, including media, property, technology, mining, banking, retail, FMCG, financial services, insurance, healthcare, telecommunications and now agriculture.

A2X is a licensed stock exchange that provides a secondary listing venue for companies. It is regulated by the Financial Sector Conduct Authority and the Prudential Authority (SARB) in terms of the Financial Markets Act. A2X began trading in October 2017.

Tradehold back in the profit zone

FOR the first six months to August 2021, Tradehold trounced tough trading conditions in its key markets to post a net profit of £4.9m, bouncing back from a loss of £8.7m in the corresponding period a year ago. As a result, the company has declared a cash dividend of 30c per ordinary share.

Given the volatility of the rand and that most of its subsidiaries conduct their operations in pounds sterling, Tradehold has always reported in this currency.

At the reporting date, net assets of £825m were split across the UK (39.5%), South Africa (52.3%) and the rest of Africa (8.2%). In the UK, its major subsidiaries are the Moorgarth Property Group and Boutique, the latter specialising in flexible office accommodation. In South Africa, it owns 74,3% of the Collins Property Group.

Joint CEO Friedrich Esterhuyse said the star performer was again the Collins Group, reporting a net operating income of R187m. This was well above budget, with management able to collect 99% of all rentals and arrears.

"An impressive performance, in our view, notwithstanding the unrest in KwaZulu-Natal in July. We didn't escape unscathed, however. We had 21 smaller buildings that were impacted, resulting in a loss of some R74m.

"Fortunately, none of the company's large industrial parks and distribution centres, that form the bulk of the portfolio, suffered any damage or looting. This was thanks to hands-on management and the deployment of specialised security for their protection."

He said the unrest had underlined the need to diversify the company's property portfolio, both in asset class and geographic spread. "Although no new acquisitions were made during the reporting period, we did acquire six properties in Austria last year and management is now pursuing further options."

In the UK, where the market fully opened in July, footfall in shopping centres increased substantially and Moorgarth was able to raise rental collections to over 90%. Progress here and elsewhere enabled Moorgarth to achieve a net profit of £1.9m against a budgeted loss of £0.6m.

Currently, retail represents 37% of the value of Moorgarth's total property holdings as against 54% in 2019. The intention is to further reduce exposure to traditional retail and negotiations for the sale of its major shopping centre in Reading near London have now reached an advanced stage.

Esterhuyse said property valuations were retained at year-end levels as no material changes had occurred in the market to warrant a revaluation at this stage.

Moorgarth other UK subsidiary Boutique has been able to capitalise on the increasing demand for flexible office space.

Boutique operates from 29 buildings in Greater London that together house more than 5 100 workstations in a hybridised working environment adapted to meet the requirements of individual tenants.

Esterhuyse said Boutique's occupancy rate had dropped from 92% at the start of the pandemic to 67% at the beginning of the present financial year. "Following an intensive marketing campaign and assisted by a steadily recovering market, occupancy grew to 85% by the end of the reporting period. As a result, the expected loss for the period was substantially reduced."

In looking ahead, Esterhuyse said the South African economy was expected to feel the fallout from the July riots that had cost the country R50bn, for some time to come. He added that the UK's recovery was being hampered by prevailing supply chain interruptions and shortages of essential materials.

"However, we are confident these shortages will be temporary and that the UK's economy will soon return to pre-pandemic levels. In South Africa, our operations are to a large extent protected by the long-term leases with major tenants that are, almost without exception leading players in the local economy.

"Although Boutique has been the only one of our subsidiaries to report a loss for the first six months, we are confident it is well placed to benefit from the changing work culture worldwide. We believe it is in the right place at the right time and, if managed well, as we think it is, should continue to enhance its performance," Esterhuyse said.

THE BEE IN MY BONNET COLUMN

Defending the indefensible

AS government departments continue to crumble with more requests for government bailouts, the penny has obviously not dropped in those institutions that we are really beyond a crisis.
The lemmings continue to stampede towards the cliff.

Take for instance, the Department of Water and Sanitation (DWS, yes, somebody please do take it on):

The third in CBN's successful series of webinar panel discussions addressing the water and sanitation related crisis, staged early in November, invited panel participation from the DWS.

Their terse response was that they would not participate due to the short notice they were given and that we should "Take notice that requests for participation in events and publications should be directed to the Department at least 12 months prior, in order to ensure that the required approvals are obtained and activities are budgeted for." Italics my emphasis.

Is one to assume that there is no one steering the bus that has the competence to be accountable and answer the crucial questions affecting the health of millions of people? Perhaps they believe that the questioners will pass away during the 12 month period and their questions with them?

Accountability: isn't that the joke word contained in an SA Christmas cracker?

As has been highlighted before in these pages, the SA Post Office has also approached the government for bailout as it is insolvent and is need of about R10-billion to meet its debt commitments – not for implementing measures to improve the 'service' it provides to the nation's population I might add.

The new governor of the Reserve Bank has responded that the government's cupboard is bare, so SOE's had better pull their socks up and sort out their own mess.

To paraphrase he song "When the going gets tough, the weak ask for a bailout".

Creative and /or logical thinking is clearly absent from the mindset of SOE's generally incompetent managers, and it seems from their equally incompetent masters too, the responsible ministers and droves of political hangers-on, taking fat salaries for doing – nothing.

If you can keep your head whilst all about you are losing theirs, you don't understand the situation.

ooooooOoooooo

I spent several weeks during November in the relative sanity of the UK, reconnecting with friends and family trying to wash away the effects of our horrendous lockdown which has left many both physically and mentally indelibly scared.

It's not all beer and skittles there though, and whilst the Brits are famous for moaning about their lot, they have cause to complain about their rapidly rising cost of living and inflation, topped with a dollop of parliamentary sleaze.

Corruption, breaking rules and taking advantage of ones position as a member of parliament for personal financial gain, is not unique to South Africa. Like our own politicians and party chieftains, when caught out with their hands in the cookie jar, they express with astonished innocence and great indignation that they have 'done nothing wrong', and in the case of disgraced UK MP Owen Patterson, unrepentant: 'I'd do the same thing again'. Despite trying to protect the errant MP by changing the rules, Boris Johnsons' explanations failed to impress fellow Tory MP's and Patterson bit the dust, siting the reason for his 'resignation' as an MP was due to 'family concerns'. It just isn't cricket.

And on that score, accusations of racism have caused a stir in the hallowed halls of English cricket, particularly Yorkshire County Cricket Club, forcing administrators to either apologise and/or resign from cosy employment.

Its cold comfort to accept that corruption, money laundering and corruption is endemic in society as a whole and the old fashioned values of common decency, duty and responsibility are a thing of the past. It's no wonder that we no longer believe our elders and (no)betters.

Eish.

Ceres Fruit Growers honours best producers of 2021

Back row, from left to right: Francois Malan (CFG), Mario du Plessis (Aurora), Willie Muller (Fairfield), Johan Kruger (Erfdeel 2), Petrus Muller (Die Eike), Sakkie Hanekom (Slagboom), Jaco le Roux (Slagboom), Charl Pretorius (Aurora), Jacques (Jakkals) Rossouw (Alhambra), Frederick Odendaal (CFG). Front row, from left to right: David Malherbe (Agterfontein), Raymond Hose (Klein Vlakte), Fourie Zulch (Wakkerstroom), Hannes Hanekom (Welgemeen), Christo Coetzee (Esperanto).

CERES Fruit Growers is one of the largest apple and pear packers and employers in the Ceres valley in South Africa's Western Cape. Each year the company honours those growers who have excelled with a trophy-giving event, held in Ceres this year on November 19.

Growers Direct Manager Frederick Odendaal said in his opening remarks that despite the many challenges the industry faced - market closures and lockdowns as a result of Covid-19; massive delays and price hikes by shipping companies; the shortages of port and refrigerated equipment and fluctuating foreign-exchange currency among them, this year was a record for CFG in terms of the volume of bins processed.

As they did last year, Aurora Farm cleaned up winning in five categories: Best Bon Chretien, Forelle, and Packham's Triumph pears; as well as the most accurate crop prediction and the highest income per hectare for pears. Winning in four categories, Welgemeen Boerdery won the Chairman's Trophy for the best overall performance; best producer for Abate Fetel and Rosemarie pears and Golden Delicious Apples. The Welgemeen Group also won the trophy for the best Kanzi apples grown on Slagboom Farm.

Cedro Farms won in four categories: Fairfield for Granny Smith and Panorama Goldens, Erfdeel 2 for Rosy Glow and Fairfield also won the trophy for the highest income per hectare for apples.

Witzenberg Properties' farms won in three categories: Esperanto Farm for the best Pink Lady; Alhambra for the best Royal Gala and Die Eike for the best Royal Beaut. Wakkerstroom, the overall winner for last year, won for the best Fuji and Topred apples.

Agterfontein won for the best Cheeky pears while Laastedrif Agri won for the best Mahana Red at Klein Vlakte farm.

Tru-Cape Fruit Marketing is the largest exporter of South African apples and pears and is equally owned by the growers of Ceres Fruit Growers and of Two-a-Day in Grabouw. Tru-Cape Managing Director Roelf Pienaar congratulated the winners on their excellent performance.

Meerkat extension gets underway

CONCOR, in partnership with OptiPower, is building the foundations and infrastructure for 20 more dishes for the pioneering MeerKAT radio telescope. A precursor to the Square Kilometre Array (SKA) – which will be the world's largest radio telescope – the MeerKAT project has already allowed astronomers to deliver unprecedented results. Its remote location in an arid area about 90 km from the town of Carnarvon is perfect for its purpose, providing a 'radio controlled' backdrop for the mid-frequency array that enables the SKA's work. According to Concor contracts manager Stephan Venter, the team commenced with the construction works on site in September 2021.

Concor, in partnership with OptiPower, is building the foundations and infrastructure for 20 more dishes for the pioneering MeerKAT radio telescope.

"With the piling rig on site, October saw our first piles drilled and concrete poured," says Venter. "Soft soil and sandy conditions require that the 20 foundations will be based on piles with a concrete cap; each of these foundations has eight piles of 750 mm diameter and between seven and eleven metres deep."

He highlights that precision is critical to the foundation construction, particularly the positioning of the bolt cage onto which each antenna pedestal is secured. These have to be accurate within fractions of a millimetre, to avoid any deflection when the dish 'looks' millions of light years into space.

"In addition to the accuracy, the foundations must ensure that the antennas are able to resist the force of winds, especially as the dish has a wide surface area," he says. "There is also no room for any vibration of the dish."

The 1,7 metre-tall, galvanised bolt cages – constructed to specification locally – are carefully positioned on the blinding of the foundation cap before the rebar armature is assembled, the shuttering is installed and the concrete is poured. After the pour, the top of the bolt cage extends from the foundation for securing the dish pedestal or tower.

Among the specific challenges of this project is the strict requirement to limit any radio frequency interference (RFI) in the vicinity of the MeerKAT telescope array.

"We have tested and modified all our on-site equipment to comply with the RFI limitations," he says. "This includes excavators, trucks, graders, compactors, telehandlers, water bowsers, TLBs and our specialised concrete batching truck."

"We are employing a recycler on this project to prepare the wearing course layer for much of the 40 km of gravel access roads," says Venter. "This allows us to save water in this dry area, as the recycler introduces water into the layer and then closes it up – keeping the moisture in for longer."

The machine can cover long, straight sections of road efficiently, preparing the way for the grader to level the surface before final compaction. Concor will also excavate and fill 70 km of trenching, for electrical and data cables to run from the antennae to the Karoo Array Processor Building (KAPB). The project is due for completion by September 2022.

Plastics industry releases latest recycling figures

PLASTICS SA, the umbrella body representing the local plastics industry, has just released the official plastic recycling stats for the year ending 31 December 2020. Each year, data is collected from plastics recyclers around the country by Plastix 911 on behalf of Plastics SA. PETCO provides figures from their listed PET recyclers, whilst raw material suppliers Sasol and Safripol provide input on the production and domestic demand of plastics raw materials.

Plastic industry market sectors:

South Africa's plastics industry is dominated by the packaging sector (which accounts for roughly 52 % of the local market), followed by building & construction (13 %), agriculture (9 %), automotive and transport applications (7 %).

Due to increased awareness of hygiene caused by the outbreak of the Covid-19 pandemic, the demand for flexible packaging increased 2 % in 2020. Demand for rigid packaging (linked to on-the-go meals, PET beverage bottles and take-away containers) shrunk, although packaging used for domestic- and personal care increased due to the greater emphasis on cleaning and the increased demand for hand sanitisers. Packaging sheeting was also used to manufacture face shields locally.

Consumption of virgin and recycled plastics in SA:

South Africa, like most countries around the world, has witnessed decline in collection and recycling rates during 2020, compared to pre-COVID-19 rates. In addition, many recyclers were unable to operate at full capacity for several months during the past year due to social distancing norms. Other factors that adversely affected the plastic recycling activities include ongoing loadshedding, water shortages and high labour costs which forced many operations to scale down, or even close their doors permanently.

- South Africa converted 1 739 480 tons of polymer into plastics products during 2020, a decrease of 5.6 % from 2019. This is the total amount of locally produced polymers, imported polymers and recycled polymers sold to local convertors in South Africa, and excludes polymers exported, virgin and recycled.
- Locally recycled polymer represented 17 % of the total domestic consumption, a drop from 18.3 % in the previous year.
- Per capita consumption for locally converted plastics (virgin and recycled) decreased to 29 kg/person (down from 31 kg/person recorded in 2019). Per capita consumption for virgin material only, dropped from 26 kg to 24 kg. Virgin consumption increased by 11 % since 2011, whilst recycled tonnages, locally converted, increased by 35 % in the same 10 year period.

Plastic recycling in SA

South Africa recorded an input recycling rate of 43.2 % during 2020. 461 500 tons of plastic waste were collected for recycling, of which 312 600 tons were successfully recycled back into raw materials. 296 500 tons of recyclate were used to produce new products while 97 260 tons of recyclate was used to produce new packaging.

In an attempt to improve the quality of the incoming recyclables, as well as to reduce their high recycling cost due to contamination, an increasing number of recyclers have started going directly to the waste generators. This allowed them access to cleaner materials and maintain their margins, albeit at lower quantities.

- 64 % of the incoming waste came from landfill and other post-consumer sources. Of this, the majority of the volume (54 %) was sourced from the formal sector, collectors and waste management companies. Most plastics were baled, but some were also loose materials.
- 18 % of the waste was post-industrial materials, sourced from distribution centres, shopping centres, farming communities and other waste generators.
- Although very critical to the value chain, only 3.6 % of recyclables were obtained directly from waste pickers and walk-ins. A further 6 % was collected from drop-off facilities and buyback centres.
- Recycling of plastic waste saved 213 500 tons of CO2 – the equivalent to the emission generated by 45 000 cars.

End-markets for plastic recyclate

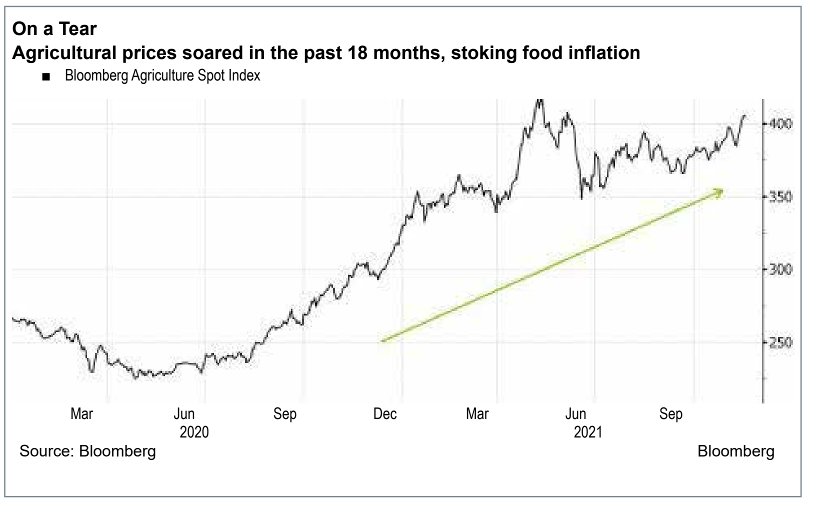
Suitable end-markets are critical for the sustainability of the plastics recycling industry. Markets for recyclate exist in most local market sectors. Only 5.2 % of the recyclate was exported as raw material to plastics convertors in the SADC region and Asia.

- Brand owners and retailers have committed to recycled content in packaging. Although currently, only recycled PET (rPET) is suitable for food contact applications, recycled PP, PE-LD and PE-HD are used in non-food applications, e.g. personal- and domestic care packaging.
- Recycled flexible packaging was the largest market for recyclate in 2020. 22 % of all recycled materials were used to manufacture products such as shopping bags, refuse bags and general flexible packaging.
- Agricultural applications making use of recycled plastics accounted for 14 % of the market, ranging from irrigation pipes, rotational moulded tanks and borehole liners to animal feeding- and water troughs.
- Other major markets for recycled plastics in South Africa include clothing and footwear (14%) and the building and construction market sectors (12 %), e.g. builders' film, geotextiles and composite building panels.

For more information or to order the complete 2020 Plastics Recycling Report, please visit www.plasticsinfo.co.za or email Dianne.Blumberg@plasticssa.co.za.

Why punish consumers?

Asks Fanie Brink, Independent Agricultural Economist



THE Reserve Bank announced an increase in its lending interest rate to commercial banks by 25 basis points to 3,75% that will also increase the overdraft rate to 7,25% as well as all other interest rates of the commercial banks with immediate effect.

The Reserve Bank, just like most other central banks in the world such as the Federal Reserve Board in the USA and the European Central Bank, believes that its interest rate policy can also stabilise ("anchor") prices between its inflation targets of 3% to 6%, protect the value of the currency and stimulate economic growth which is single biggest delusion in economic science as there is absolutely no evidence to substantiate these claims. The same is true for the latest suggestion by the Governor of the Reserve Bank, Lesetja Kganyago, to change the existing inflation targets to a fixed target of 3%.

The inflation rate is determined by all the local and international political and economic factors that have an influence on the supply and demand of goods and services, and the value of the currency, respectively! Economic growth is created by the supply and demand sides of the economy, as proven by Statistics SA every quarter, that is driven by the profit motive!

The first question that must be asked is why does the Reserve Bank punish consumers for price increases that they are not responsible for? What can the Bank do about the increases in the international crude oil price, a weakening exchange rate that will further deteriorate because of the devastating political and economic socialist ideology of the ANC government as well as all the taxes and levies on local fuel prices which is controlled by the government on the basis of a fixed formula and annually increased that has nothing to do with the consumption of fuel by consumers!! Exactly nothing!

The price of crude oil fell last year due to the Covid19 pandemic to the point where some international oil producers went down financially which was responsible for the lower crude oil supply. Now that the greatest danger of the pandemic has subsided, demand has risen sharply again which the Petroleum Exporting Countries (OPEC) and Russia have not yet been able to meet. The price of Brent crude oil has surged more than 60% in 2021, reaching a three-year high of $86,70 so far as demand recovers, while OPEC and Russia have eased record output cuts in 2020 slowly with gradual monthly production increases despite calls for more crude oil from the US and other consumers.

The international price increases of crude oil are consequently out of the control of the central banks who still believe that they can solve the imbalance in the market by increasing interest rates which is meaningless but which has once again punished local consumers for price increases for which they are not in any way responsible for.

The second question that must be asked is what can the Bank do about the increasing and excessive profit margins on food by the manufacturing and trading industries in the economy that consumers are not responsible for and in no way related is to the demand for food? The prices of agricultural products is traded in a futures market, the South African Futures Market (SAFEX), that are solely determined by the market forces of supply and demand in the market. The prices of local producers are, in fact, the international derivative prices of agricultural products that are traded on the US futures market, the Chicago Board of Trade, and are also purely determined by the operation of the market forces of supply and demand.

International agricultural producers and food prices have increased sharply the past year because of international higher demand for food but even more because of the "disruptions to the global supply chain that are set to persist in 2022, according to the chief executive officer of Cargill Inc., David MacLennan, the agriculture powerhouse in the United States, who highlighted labour shortages as one of the biggest risks facing the industry.

He says that "world food prices climbed to a decade high in October, as indicated in the attached chart, that were responsible for even higher grocery bills for households and potentially worsening of global hunger.

Bad weather has hit harvests, freight costs have soared and labour shortages have roiled the food supply chain.

An energy crisis has also caused a dramatic surge in fertilizer bills for farmers all around the world. Even with the inevitable natural disasters coming from climate volatility, by and large, the food supply chain has worked pretty well in the last year or so with Covid-19, but nonetheless, it's something we cannot take for granted.

The search for "greener" vehicles, aeroplane fuel and biodiesel for production and road transport are also pitting food against energy production, leading to tighter edible oil supplies. Prices for palm oil, the most consumed vegetable oil in the world, have soared about 50% in the past year, while soybean oil is up 60%. Canola vegetable oil is near a record.

The "food-versus-fuel" tension will also, according to MacLennan, "…become more intense than it's ever been in the last 15 years. The day will come when more agricultural products will be used for clean energy than food, so it will be incumbent upon the farmers of the world to innovate and become more productive."

It is expected from the agricultural industry is to produce "cheap" food for poor people, according to the latest newsletter Agri SA, while no farmer in the world can produce food at prices that poor people can afford. Food security can only be sustainable if the production of food is profitable. It is not the responsibility of agricultural producers but the government that determines the macro and agricultural economic policy of the country.

The third question that must be asked is why the international central banks believe that consumers prices are only determined on the demand side and not also on the supply side of the economy such as crude oil production natural disasters that can, among others, can cause severe droughts and floods.

Most consumers are still struggling financially for months now and are not yet able to increase their consumption spending to the same levels as before the pandemic due to the higher unemployment.

In its provisional financial budget tabled in Parliament last week, the government has made it clear that it is not in a position to address the serious fiscal and social problems in the country and to consolidate its debt as if it will make any difference to its budget deficit and debt burden that will become clearer during the main budget in February.

The interest rate policy of the Reserve Bank cannot contain the inflation rate, protect the value of the currency and stimulate economic growth rate because these economic variables are all determined by the operation of the market forces of supply and demand in the economy and to place its focus on the expenditure of consumers that is not in any way responsible for the price increases of fuel and food is the wrong target," according to Brink.

The REAL role of the data scientist

AS far back as 2012, a data scientist was referred to as the sexiest job of the 21st Century. Even though these skills remain in great demand, a global shortage of the in-demand resources has seen companies across industry sectors still struggle to unlock the full potential of their internal data.

Fortunately, momentum has started to shift. Not only is there an increased awareness of the need for data scientists, but higher education institutions are now also providing for more courses focused on the skills required of the position. Added to this, the availability of more advanced technology is also contributing to a more conducive environment for data scientists.

Experiential factor

Like most specialised sectors, however, nothing will replace experience. As a result, the IT industry needs to urgently build-on, and support, experientially driven courses, internships, and processes to facilitate the data scientist journey from 'sexy and sole purpose', to critical and team reliant!

"Of course, the influx of data science courses and degrees are a great help on this journey, but they are only one piece of the puzzle," says Jessie Rudd, Technical Business Analyst at PBT Group. "A data scientist must have experience regarding how to work with volumes of disparate data, as well as an understanding of what the business truly needs from its data. This can only come from time and understanding. Of course, theory is important, but the skills to perform the job correctly can only come from being at the 'coal face' and experiencing data in action."

Andreas Bartsch, Head of Innovation and Services at PBT Group, believes that part of the challenge in fulfilling the role of data scientist lies in its definition, and its misguided perception within organisations.

"Within the industry, there are too many broad definitions of what the job entails. This is a real concern as many higher education institutions refer to their graduates as data scientists after they have completed their courses, which this not actually the case. Even within the corporate environment, data science has many different definitions, which further exacerbates the challenge," says Bartsch.

Technology-led

Thanks to the availability of Artificial Intelligence (AI) and Machine Learning (ML) technologies, analysing data, at scale, has become easier than ever. However, this does not mean it is something that can be left for the machines to do, instead, it requires a balance between form and function.

"Data engineering enables AI. And many data science functions rely on data readiness, data accuracy, data completeness, and so on. This therefore requires an integrated approach to data science, which might not come necessarily from only having theoretical knowledge," says Bartsch.

Teamwork

In fact, many of the skill sets and experience essential to undertaking data science do not come from an individual, but the team around them.

"Building and maintaining a strong data science team has become a critical function at most organisations. From data collection and management to analysis and data engineering, all this requires a combination of skilled people that work in unison to help accomplish the strategic objectives of the organisation," says Rudd.

"If companies are to truly embrace data science, they must understand all the intricacies involved and not just rely on plugging graduates into the growing data real estate," concludes Bartsch.

Fintech company acquired in R1.5bn transaction

CROSSFIN, a player in the South African fintech industry, has been acquired by a consortium of investors ("Consortium").

The transaction will see Crossfin secure the required capital to pursue the next phase of its growth. The transaction is one of the largest private equity-led investments in the fintech sector in South Africa to date and offers the consortium exposure to an industry that has and is expected to continue benefitting, among others, from the secular trends of digitalisation and proliferation of payments technologies.

The transaction will see the exit of the founding investors Capital Eye Investments and the Multiply Group, who have been anchor shareholders since 2017. The consortium is led by Ethos' Mid-Market Fund I ("EMMF I") and includes the founding Crossfin executive management team, EMMF I Co-Investors, Ethos Artificial Intelligence Fund I, and leading empowerment investor African Rainbow Capital ("Consortium"). Independent investment banking firm Fairview Partners acted as Financial Advisor on the Transaction.

Crossfin is an independent fintech platform operating predominantly in South Africa with a particular focus on payments technologies and smart funding.

The current management team co-founded the business and led it since inception. Crossfin operates a differentiated business model based on investing and supporting an ecosystem of synergetic and complementary fintech businesses at different stages of maturity, thus creating exposure to high growth opportunities while ensuring positive profitability and cash flows are consistently achieved.

The differentiated business model of Crossfin has allowed the platform to consistently achieve robust top line and earnings growth, and a top quartile Gross Internal Rate of Return to shareholders despite very limited access to capital to support growth. The performance of the business and its management team was achieved during a particularly challenging economic environment and despite the impact of the Covid-19 pandemic and associated lockdown measures implemented in South Africa in 2020 and 2021.

Pfizer, BioNTech, Moderna making $1 000 profit every second: analysis

PFIZER, BioNTech and Moderna are making combined profits of $65,000 every minute from their highly successful COVID-19 vaccines while the world's poorest countries remain largely unvaccinated, according to a new analysis.

The companies have sold the vast majority of their doses to rich countries, leaving low-income nations in the lurch, said the People's Vaccine Alliance (PVA), a coalition campaigning for wider access to COVID vaccines, which based its calculations on the firms' own earning reports.

The Alliance estimates that the trio will make pre-tax profits of $34 billion this year between them, which works out to over $1,000 a second, $65,000 a minute or $93.5 million a day.

"It is obscene that just a few companies are making millions of dollars in profit every single hour, while just two percent of people in low-income countries have been fully vaccinated

Image credit:Reuters

against coronavirus," Maaza Seyoum of the African Alliance and People's Vaccine Alliance Africa said.

"Pfizer, BioNTech and Moderna have used their monopolies to prioritise the most profitable contracts with the richest governments, leaving low-income countries out in the cold."

Pfizer and BioNTech have delivered less than one percent of their total supplies to low-income countries while Moderna has delivered just 0.2 percent, the PVA said.

Currently, 98 percent of people in low-income countries have not been fully vaccinated.

The three companies' actions are in contrast to AstraZeneca and Johnson & Johnson, which provided their vaccines on a not-for-profit basis, though both have announced they foresee ending this arrangement in future as the pandemic winds down.

PVA said that despite receiving public funding of more than $8 billion, Pfizer, BioNTech and Moderna have refused calls to transfer vaccine technology to producers in low- and middle-income countries via the World Health Organization, "a move that could increase global supply, drive down prices and save millions of lives."

"In Moderna's case, this is despite explicit pressure from the White House and requests from the WHO that the company collaborate in and help accelerate its plan to replicate the Moderna vaccine for wider production at its mRNA hub in South Africa," the group said.

While Pfizer CEO Albert Bourla has dismissed technology transfer as "dangerous nonsense," the WHO's decision to grant emergency use approval to the Indian-developed Covaxin earlier this month proves that developing countries have the capacity and expertise, PVA added.

PVA, whose 80 members include the African Alliance, Global Justice Now, Oxfam, and UNAIDS, is calling for pharmaceutical corporations to immediately suspend intellectual property rights for COVID vaccines by agreeing to a proposed waiver of World Trade Organisation's TRIPS agreement.

More than 100 nations, including the United States, back that move, but it is being blocked by rich countries including the UK and Germany.

SEIFSA encouraged by continuous improvement in selling price inflation

THE Steel and Engineering Industries Federation of Southern Africa (SEIFSA) welcomes the continued improvement in the Produce Price Index (PPI) for intermediate manufactured goods, as reported by Statistics South Africa (Stats SA).

"PPI data has improved consecutively from January this year, alongside the PPI for final manufactured goods. This is good news for the broader manufacturing sector and specifically the Metals and Engineering (M&E) sector against the backdrop of the coronavirus pandemic, lootings, industrial action and increased volatility in imported prices as a result of a generally weak exchange rate", says SEIFSA Economist Palesa Molise.

The Stats SA data shows that on a year-on-year basis, the PPI for intermediate manufactured goods increased to 20.4 percent in October 2021, from 19.5 percent in September 2021. The main contributors to the annual rate were: chemicals, rubber and plastic products, basic and fabricated metals, saw-milling and wood. PPI for final manufactured goods for the broader manufacturing sector also increased to 8.1 percent in October 2021, up from 7.8 percent in September 2021 on a year-on-year basis.

> "Better PPI for intermediate manufactured goods amounts to some good news for producers in the M&E sector..."

"Given that the PPI for intermediate manufactured goods has maintained an upward trajectory since January 2021, an increasing trend in the PPI for intermediate manufactured goods bodes well for the broader manufacturing sector. This assist businesses to be more competitive considering that businesses have been struggling with increases in input costs. Rising fuel prices and energy costs remain a concern, especially given the current challenging economic environment, characterised by weak domestic demand and declining employment numbers. Better PPI for intermediate manufactured goods amounts to some good news for producers in the M&E sector, who now have some lee-way to recover the losses incurred as a result of volatile input costs which will add to the bolstering of margins", said Molise.

During this immediate period of recovery from the recent industrial action in the steel and engineering sector, businesses will be seeking to leverage off the improvement in selling price inflation amidst the on-going uncertainties around a possible fourth wave, on-going and intermittent load-shedding and the possible reintroduction of harsher COVID-19 adjustment levels.

Global GreenTag: are you aware and on-board?

***Lizette Swanevelder**, Director, Global GreenTag Africa, responds to a questions posed by CBN in this Q&A article.*

What does Global GREENTAG certification represent?

GLOBAL GreenTag Africa simplifies the selection of environmentally, sustainable, healthy and ethical products for industries like Architecture, Design, Construction, Personal Care and Cleaning - using Global GreenTag CertTM - one of the most scientifically advanced, product certification and declaration systems in the world.

Helping professionals and consumers to make informed decisions about preferred green and ethical products,

The programme allows environmental, health and social impacts to become consideration factors in making building decisions, at no extra cost. It is performance-based, using a cradle-to-grave analysis of product impacts and benefits, synergy with other products, detailed health impacts, and others.

It is quantifiable and objective with different, scored levels of certification, allowing for infinite determination of which products are good, better and best.

Reports and detail are available to the public at no charge whatsoever, on a free-to-air website.

What is the differentiator from other certifications?

Global GreenTag is the closest thing the world has to a true single source certifier. It is designed to help manufacturers and professionals differentiate between products and support risk minimisation around health and sustainability marketing claims.

The GreenTag certification programme is a unique, world first, whole of life, whole of sustainability green product rating/certification programme. It uses scientifically robust life cycle analysis to comparatively rank the performance of eco and health-preferred products, with a focus on built environment products as a solution to these industry issues. It includes metrics on energy and water efficiency, indoor environment quality, pollution prevention, resource use, producer responsibility and detailed health impacts.

The programme allows environmental, health and social impacts to become consideration factors in making building decisions. It is performance-based, using a cradle-to-grave analysis of product impacts and benefits, synergy with other products, detailed health impacts, and others.

Why companies need to make the move towards having their products GREENTAG Certified? And or why companies should consider the positives when utilising or purchasing products that hold this certification

Today, more than ever before, we need a deeper understanding how building design impacts, potentially thousands of people, before its construction, during its use, and after deconstruction, and to produce solutions that will solve these concerns and prevent further ecological impact to the environment.

We would all like to live and work in greener buildings, but we need to start by taking the time to look more closely at the environmental impact of construction products.

Unfortunately, finding out which products are safer and better for the environment, is a lot harder than it seems.

Genuine products need genuine recognition and 'Greenwash' has ruled in the eco market. Any brand can claim to be an environmental saviour with a few 'natural' ingredients and some sharp marketing. Buyers don't know who to trust.

Fake products in green packaging take sales away from genuinely deserving brands. The planet continues to be exploited in the name of inauthentic green design. Everyone suffers.

We created the Global GreenTag set of tools to cut through the greenwash and empower professionals and consumers alike to confidently choose products that have been made in the most planet-friendly way possible and assessed using evidence based, robust, cutting edge science.

GreenTag takes the doubt out of buying. And because buyers know they can trust the label, genuine green products earn the greatest reward of all: trust.

To build trust in GreenTag we:

- require full (100%) disclosure of every product ingredient (to 100ppm) and process,
- made it the most independently certified, standards compliant certification in the market (ISO 9001 Certified, Externally Verified by DNV as compliant with ISO 14024 and ISO 17965).

What is Greenwashing?

Manufacturers globally, and in South Africa, have realised that green is becoming a major selling point, so without changing the product, they often just use marketing words and graphics, not science to create their message.

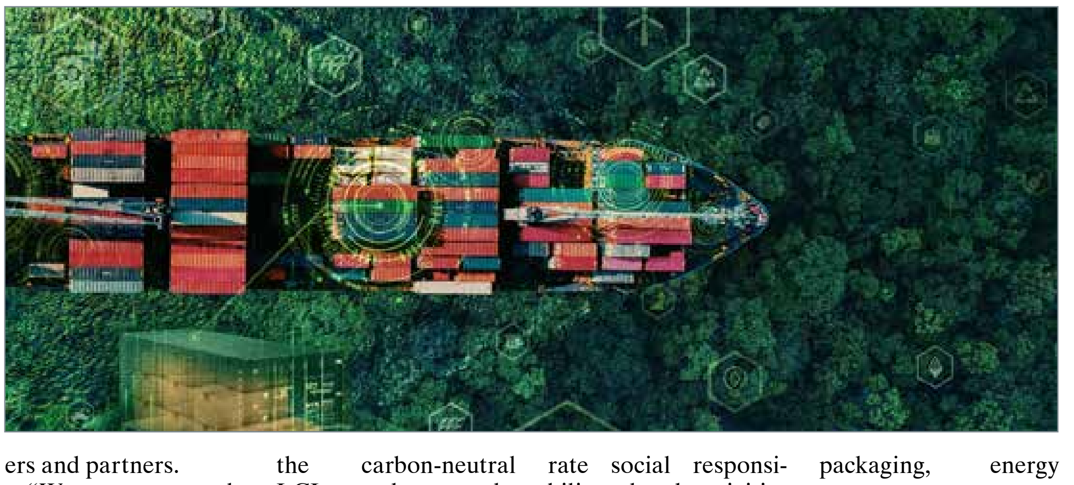
Greenwashing, otherwise known as the process of making products or services appear environmentally sustainable and eco-friendly, when they, in fact, are not.

It is a concerning trend that has been increasing over the last decade in just about every industry. As companies are more aggressively pressured to be socially conscious and sustainable in their practices, they revert to cutting corners and misleading consumers with a "green image.

I do think it is important to bring to the attention of industry that the above will assist us greatly in the race toward climate change - up until the Virtual race - I was not aware that there was only a 7 year window period - a rude awakening from my side and a confession at the same time - therefore we must not assume that industry is aware but rather educate and advise.

Logistics group commits to 100% carbon neutral LCL by 2030

Achieving carbon-neutral global LCL services within a decade is part of the Rhenus strategy to spearhead the industry's transition to sustainable logistics.



Jan Harnisch.

THE Rhenus Group, a global logistics service provider, will neutralize the carbon emissions of all of its less-than-container-load (LCL) products by 2030. Starting from 2022, cargo shipped with the Rhenus Consolidation Box out of Hilden Gateway (Germany) will be carbon neutral, with no additional costs to customers. The service will progressively roll out through all gateways in which Rhenus operates worldwide.

As one of the leaders in the logistics industry, Rhenus has full responsibility for its actions and decisions. Sustainability is a priority in the company's business. That is why Rhenus would like to transform the existing services into environmentally friendly options to shape a better future for customers and partners.

"We are not only striving to make logistics simple for our customers, but also doing our part to support the environment, such as investing in sustainability projects," said Jan Harnisch, Global Chief Operating Officer at Rhenus Air & Ocean.

With green thinking firmly established throughout the Rhenus operations, the carbon-neutral LCL product marks a new milestone in its sustainability strategy. The Rhenus Group launched the world's first CO2 reduction program for airfreight, RHEGREEN, in 2019. Since 2015, Rhenus has undergone an annual assessment by, and received the Silver Status for several years from EcoVadis, an independent agency that evaluates corporate social responsibility-related activities in accordance with international standards. On-going green logistics efforts worldwide include a seven-year continuous annual tree-planting activity in India, climate-neutral warehouse locations with green infrastructure like renewable energy and LED lighting as well as electric mobility and recyclable packaging, energy management system implementation across Germany and the Netherlands and a Rhenus Group Corporate Forest to support agroforestry projects. Rhenus continues to explore green ideas and new technologies, in collaboration with research institutions, partners and customers, to make the global supply chain more sustainable.

The Rhenus Group is one of the leading logistics specialists with global business operations and annual turnover amounting to EUR 5.4 billion. 33,500 employees work at 820 business sites and develop innovative solutions along the complete supply chain. Whether providing transport, warehousing, customs clearance or value-added services, the family business pools its operations in various business units where the needs of customers are the major focus at all times.

Let the beer wars begin...

THE last time Stellenbosch-based liquor group Distell - then Stellenbosch Farmers Winery - got involved in the beer industry (with controversial businessman Louis Luyt) was in the seventies, and that did not end well as the then market leader SA Breweries landed the knockout blows in a short lived beer war.

Fast forward about 45 years, and Distell is back in the beer market - but this time with a more formidable ally in form of Dutch brewing giant Heineken and Namibian Breweries (the maker of Windhoek and Tafel beers). In short Heineken has made a takeover proposal for all of Distell's brands - excluding its international whiskey brands. At the same time Heineken will be taking control of Namibian Breweries - which along with Distell - will form an African beverages giant strong enough to take on the likes of ABInBev (which owns SA Breweries), Diageo and Pernod Ricard. For the record, the Heineken proposal values Distell at a cool R40 billion.

Now Distell may have been kept out of the beer market for decades, but the group managed to corner a lucrative niche in cider with best-selling brands like Savanna and Hunter's Dry. Heineken also seems very enamoured with Distell's affordable wine ranges - especially the strong selling 4th Street box wine brand (which Heineken reckons has redefined the wine market).

Talk is that Distell - buoyed by the continued success of Savanna and Hunters - is itching to launch a premium priced beer. CBN wonders if Distell - which is headed by former SA Breweries executive Richard Rushton - will look to leverage a beer launch off its cider brands...or look to creating an entirely new beer range?

Whatever the case a new Southern African liquor giant should create additzional competitive pressures as competitors look to protect market share. Whether consumers are fortunate enough to see a beer war declared in the next few months remains to be seen.

Price cutting atrocities would, of course, be unavoidable if Distell can bring beer brands to market before the new enlarged corporate structure is finalised.

Rushton noted that proposed arrangement had the potential to leverage the strength of Heineken's global footprint with Distell's leading brands to create a formidable, diverse beverage company for Africa. "We will have a stronger route-to-market with a unique multi-category portfolio, furthering our sustainable growth trajectory and ability to compete on scale."

SA wine industry releases first 2022 crop estimate

SOUTH African wine grape producers expect a good, but somewhat smaller 2022 wine grape crop following a favourable and healthy season. This according to the first of four crop estimates issued by viticulturists and producer cellars.

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

"Producers experienced an excellent winter due to sufficient cold, as reflected by regular snowfall on mountain peaks, along with consistent rain which supplemented soil water levels and contributed to a substantial rise in Western Cape dam levels," Conrad says. The collective dam level was at 81% by mid-September, just before the start of the 2022 growing season. In the wine grape cultivation areas of the Northern Cape, the water supply from the Vaal system also appear to be sufficient up until now.

The mostly cool spring and wet soil conditions led to bud break generally occurring seven to 14 days later than normal, however budding was consistently good and even. Although the initial growth was slow due to relatively cool conditions, warmer weather in November accelerated the growth rate and most vineyards were able to catch up during flowering, which occurred approximately five days later than normal. Earlier cultivars flowered well, but certain late cultivars like Cabernet Sauvignon flowered during cool, wet and windy conditions, which may have a negative effect on berry set.

"Due to the nature of the wine industry's geographical distribution, variation in crop size is observed between the respective regions," Conrad says. "The nett decrease in the estimate is mainly attributed to vineyard uprootings, as well as below-average bunch numbers and sizes in certain regions and cultivars.

Regions where vineyards had mostly undergone flowering before the cold, windy weather mid-November, as well as those with sufficient soil and irrigation water and an absence of fungal diseases, can expect a higher wine grape crop than in 2021.

"The season looks promising, but a lot could change leading up to the harvest," Conrad says. The next crop estimate by viticulturists and producer cellars will be released in the third week of January 2022.

Learn to make your own gin

By Lisa Frew

IT's no secret, Capetonians love a good gin. We love it so much we even have our own gin route stretching six kilometres between Cape Town city centre and Salt River. And now there's a great new addition sitting right at the start of the route: Distillers & Union, a distillery where you can not only taste a range of award-winning gins (and vodka, rum and fiery ginger beer), but even make your own (it's a great experience, whether you're gin-mad or not).

Capetonians' love of gin is as versatile as the drink itself. Some enjoy the citrus undertones of a sweet and fruity gin, others love the botanical fragrance that comes from juniper berries, while still others enjoy the spicy notes of coriander, peppercorns or ginger peel. In Woodstock, just 140 metres from The Old Biscuit Mill, you can make your very own 500ml gin interpretation. Everything, from the fragrant spices, botanical notes, citrus undertones and alcohol level is up to you, even the bottle's logo. All this gets done in the working distillery, which used to be an old kitchen hall, according to Distillers & Union co-founder Simon Von Witt.

Observe the art of gin making

"Unlike other distilleries, you can see the process happening right in front of you," says Von Witt. It's true. As you walk inside you'll notice several antique-looking small copper pot stills lining the middle of the table. That's where the magic happens. As you settle into your seat, take the time to look over – and sniff, if you like – all the bottles of spices, citrus, herbs and floral botanicals. There's bottled African wormwood, rosebuds, orange rinds, wild rosemary, pink peppercorns, buchu spice, rooibos, bariship and others, all preserved in a 60% neutral alcohol solution. Von Witt says lime and cardamom are a classic combination, but take this opportunity to explore. Making your perfect bottle of gin is easier than you think.

Let the gin triangle guide you

All you need to do is stay within the 'gin triangle' says Von Witt. The triangle is the core ingredients of juniper, coriander and angelica root. Citrus and floral ingredients will form the base. This is then paired with a loose measurement of your chosen spicy, floral, citrus and herbal botanicals. Don't worry, the distiller guide will help you measure out each ingredient correctly. After that, you're ready to pour your gin concoction into the copper pot still for brewing. Then, sit back and watch the magic unfold – now would be a good time to check out what other gems the distillery has tucked away.

Walk around the working distillery

The distilling process can take anywhere between 15 and 20 minutes. While you wait, take a look at some of the artisans in action. There's a working distillery at the back – mini-forklift, giant gin crates and all – that is home to over numerous gin brands, including 5 Pence and Dragon Brewing Co, which are also run by Distillers & Union co-founders Simon Von Witt and Warren Harries-Jones. Plus, locally crafted gin brands Ora and Enigma are on site and available to taste.

Reprinted from capetownmagazine.com

Western Cape supports new winery in Franschhoek

ON 3 December 2021, the Western Cape Minister of Agriculture, Dr Ivan Meyer, visited the Klein Goederust Franschhoek Boutique Winery owned by Paul Siguqa.

Located in Franschhoek, Klein Goederust has been transformed from its dilapidated state to a promising boutique wine farm.

Meyer handed over a new tractor to the farm owner and his team during the visit.

Commenting on his visit, Meyer said:

"Producer support and development is one of my Ministerial Priorities. Today's handover is in addition to the Western Cape Department of Agriculture's (WCDoA's) earlier contribution towards upgrading the irrigation system required for the 5.5 hectares of wine grape planting established this year. Further support is also provided by the WCDOA's extension and advisory services."

Owner Paul Siguqa grew up in the Franschhoek region with the dream of owning a farm one day.

Siguqa: "My dream was realised in 2019 when I bought this farm.

Minister Meyer poses with Paul Siguqa, owner of the Klein Goederust Franschhoek Boutique Winery.

With the assistance of my good friend and winemaker, Rodney Zimba, the first wines were sourced and carefully blended and launched this month, and as of today, the restaurant and tasting room is also officially opened."

Meyer welcomed the news that Klein Goederust has created 17 new job opportunities in the Franschhoek region.

Meyer: "Growing the economy and creating jobs in the Western Cape Government's priority."

Meyer continues: "As highlighted by South Africa's Quarterly Labour Force Survey statistics (QLFS) for the 3rd quarter of 2021 Western Cape industry level agricultural employment increased 44.3% in the 3rd quarter of 2021 when compared to the same quarter last year. The observed growth of 44.3% in agricultural work is mainly in primary agriculture."

According to StatsSA, this phenomenal growth rate in employment within the sector can be attributed to the favourable climatic conditions (e.g. rainfall), which continue to boost agricultural production with increased water availability and the momentum that the sector has built as an essential services sector.

"Agri-businesses such as the Klein Goederust Franschhoek Boutique Winery will contribute to further job creation within the agricultural sector in the Western Cape," concluded Meyer.

WATER ENGINEERING

The link between power security and water

Chetan Mistry.

CALIFORNIA is currently on the edge of its seat during wildfire season. The U.S. state's vast forests, many clustered in its north, are notorious for their tinderbox conditions. High winds can pick up debris such as branches, hitting power lines and causing sparks that quickly grow into infernos.

Such incidents are undoubtedly bad for California's energy reliability. But they are flashpoints in a much bigger problem. Fires not only destroy power infrastructure, but persistent droughts are causing significant water shortages in the area, curbing energy generation. Experts warn that California could fall short of as much as 1,150 MW due to these problems. Much of the shortage impacts natural gas power plants, which may surprise some.

"When you talk about water and power, we immediately think of hydro power plants," explains Chetan Mistry, Strategy and Marketing Manager for Xylem Africa. "But that is just a direct example of using water to generate power. Water is used across all types of industrial applications, including energy. In most energy scenarios, water is important for cooling. Without water, a power generation site of any kind will stop operating."

There are many examples of this relationship. In 2013, India had to shut down a thermal plant due to severe water shortages. On several occasions in the past 20 years, Australia has reduced coal power operations to safeguard municipal water supplies. And in South Africa, new power plants built in the past decade have started using more expensive dry cooling systems due to insufficient water supplies.

According to the World Bank, between 2010 and 2014, "more than 50% of the world's power utility and energy companies have experienced water-related business impacts. At least two-thirds indicate that water is a substantive risk to business operations." The relationship is set to become more strained as by 2035, the world's energy consumption will increase by 35%, increasing water consumption by 85%, reports the International Energy Agency.

2.5 billion people do not have access to reliable electricity, and 2.8 billion live in water-stressed areas. Much of that pressure exists in sub-Saharan Africa. The African Development Bank notes that "the African continent has the lowest electrification rate of all regions. It is estimated that only 43% of the population has access to electricity, compared with 77% in the developing world. In sub-Saharan Africa, the ratio is much lower at 32% and only 18% in rural areas.

Yet California's woes are a warning that the energy-water nexus is not solely a developmental issue. It impacts even some of the world's wealthiest areas. Water doesn't favour the rich over the poor or developed nations over developing nations. Water is instrumental to industrial societies that rely on large-scale power generation. Power, incidentally, is instrumental to managing and distributing water. It's a vicious cycle: no water means no power, and no power means no water.

Fortunately, there is much we can do to reverse the situation, says Mistry:

"There is a silver lining to this conversation, and that's to do with how we look at water. We've not treated water with the same level of scrutiny and management that we apply to energy. But today you increasingly find companies are scrutinising their water usage as carefully as other resources. They look for leaks and other forms of waste, they consider more carefully how and where they use water, and they even take action to create their own water stockpiles, such as capturing rainwater or recycling grey water."

We can do numerous things to improve water availability. Such actions include better management of water resources such as wetlands and aquifers, and educating people on the importance of water to maintain our modern societies. Many gains will also come from companies taking a sharper focus on water management to help reduce their risks and costs.

Ultimately, if we can treat energy and water as closely related enablers of society, we take big steps forward. Initiatives such as the African Development Bank's African Water Facility and Thirsty Energy at the World Bank help lay the groundwork for managing water and energy in concert, eliminating management silos and disparate planning, among other improvements.

The better we can inform ourselves on our world's relationship with water, the more we will overcome our energy challenges, says Mistry, "Sustainability is not a buzz word any longer. It's a philosophy we must all embrace if we want to overcome our biggest social challenges. That doesn't only have to happen at the top. Every time someone learns to use water more efficiently and to value the resource, it's a change. Whether they use drip irrigation for their veggie garden, recycle water for other uses, or diligently report leaks they see, it all counts. Once we understand that water and energy come together to make our world possible, we start taking water more seriously."

UWC citizen scientist water project is a winner at the Berlin Science Week Summit

Author: Harriet Box

A University of the Western Cape's (UWC) citizen scientist water project emerged as one of the winners at the recent prestigious international event, the Berlin Science Week Falling Walls Summit.

Prof Jacqueline Goldin is an extraordinary associate professor of Anthropology and Water Sciences in the Centre of UNESCO Chair in Groundwater and Earth Sciences.

"We, as South African academics, need to communicate our science on these global platforms, because the work we're doing in South Africa is amazing and we really need to share it with the world. I am so pleased with the result and the opportunity to showcase science on an international platform such as this one – it was an immensely inspiring experience," she said.

The winning project is entitled 'Diamonds On The Soles Of Their Feet' and is recognised as one of the top three out of 189 science projects from 80 countries. It involves ordinary citizens - referred to as 'diamonds' that have treasures on the soles of their feet; in this case - valuable data pertaining to underground water.

The citizen scientists, consisting of farmers and farm labourers, are working alongside scientists using their smartphones to share the data they acquire about the quantity of underground water in remote inaccessible parts of Limpopo. This data is uploaded onto the web and is visible and available.

Prof Goldin is especially pleased with the citizen scientists – who were all quite isolated – who are now part of a community of practice and have a sense of belonging to the wider Hout Catchment.

"Thanks to the great team efforts we have the recognition of how important it is to empower communities to be able to access data from very remote wells that would otherwise be impossible to obtain. And ordinary citizens are now curious and eager to learn more about water's occurrence in their natural environment," noted Prof Goldin.

"Berlin Science Week forms part of The Falling Walls Summit, which is held on the anniversary of the fall of the Berlin Wall and it celebrates science breakthroughs – answering the question of how a particular breakthrough has been able to break down walls between science and society. It is a reminder of what happened in Nazi Germany when science and 'facts' were so distorted. It is truly a unique global stage for leaders from the world of science, business, politics, arts and society.

"Projects, such as ours, are bringing science out of the laboratory - walls that often stop us from doing what we want to do, can be broken down.

In our case, it was remote, inaccessible areas which had put up these walls – and as we are working in a multidisciplinary team – it also smashes down walls that might have existed between science and the humanities.

"The Falling Walls Summit is all about collaboration – and taking science communication seriously. It also shatters the myth of the 'hero' scientist. The Berlin Science Week made it so clear that scientific breakthroughs, such as ours, are deeply collaborative team efforts."

Some of the fascinating topics from participating countries included a presentation by Ozlem Tureci from BioNnTech on the mRNA vaccines to combat Covid, restoring vision for retinal degeneration, wireless medical robots inside our body and the next generation of batteries which will be able to charge our cell phones or laptops in three minutes.

Also, topics on how to combat deafness in Ghana and how to encourage traditional healers to work with doctors and combat myths and problems around mental health in Kenya - using storytelling to communicate science to society.

She expressed her gratitude to the Danish International Development Agency (DANIDA) through the University of Copenhagen who funded the first part of the project, and now to the Water Research Commission – who are real science engagers - for making this work possible.

Hennops River revival – a year in review

As a follow up from the story carried in our September edition, Tarryn Johnston, Founder & CEO, Hennops Revival NPO/PBO, reflects on a busy 2021.

HENNOPS Revival exists because there is a massive vacuum in institutional arrangements for the wellbeing of our River

A largely community driven organisation encouraging Active Citizens to help municipalities function better.

Dysfunctional waste water treatment works abound in our country resulting in sewage pollution in our rivers being nothing short of catastrophic; nothing can survive if this continues. We have visions of putting remedial plans in place to counter this, but will obviously require substantial funding.

Winter also gives us the opportunity to do more proactive work instead of the reactive rubbish picking in rainy season..

We have established a brilliant partnership with Talbot the Art of Water who sponsors regular water quality testing and this includes a full 12 weeks of testing between April and June, analysis of results and accredited testing.

This year we were blessed to partner with Brand IQ Outdoor Advertising, who met with me to come up with a multi-phased litter catchment system, designed specifically on my knowledge of the river, the floods, the litter, the flow etc.

BrandIQ fully sponsored a bottom up design, instead of top down as well as a number of clean-ups – helping Hennops Revival with sustainable job creation for impoverished members of community.

- Phase 1: To catch trees and large debris
- Phase 2: To catch that which passes through the first phase
- Phase 3: To catch finer pieces of waste

Phase 3 consists of a row of barrels which float across the river, anchored on one side and operates on a release system as soon as the water reaches a certain height, it will just pop off, so that we do not create dams or back flooding..

This system is working exceptionally well; I am very pleased with the results!

Our partnership with Anglo American Ambassadors for Good and Hydromulch initiated a pilot project with Vetiver Grass, placing pontoons into the river as an experiment to determine the role these plants could play in remediation, to test the leaves and the roots to understand what they are extracting from the water and causing them to thrive. We also did a bank retention project where we planted 4 000 slips of the sterile grass in an area of the river bank which has tripled in size over time, to retain the banks and regenerate the soil.

A number of successful community clean-ups were hosted over the course of the year extending the invite to the community as well as the businesses to join in on the days. These events were attended by key role players in the municipality; the mayor and MMC.

Together with our partners – Triple-P, Armour and Kleen-Health we hosted the My Water Check Campaign working with the community to educate, theoretically and in the field to determine river health using citizen science tools - Minisass and basic water chemistry.

Hennops Revival has a 5 year Memorandum of Understanding in place with the City of Tshwane..

What started out as a single mother hosting a once off river clean-up at the request of her daughter 2 years ago has developed in ways I never imagined, including global recognition! I certainly did not see this coming, but here it is!

Please pause and reflect.

In 2021 Hennops Revival received a number of certification and awards:

- City of Tshwane – Certificate of Appreciation
- Caroline Reid Awards – Certificate of Appreciation
- Triple-P – Community River Health Conservation Training Certificate
- South Africa Prestige Awards – Winner – Environmental Organisation of the Year 21/22
- Enviropaedia Eco-Logic Awards 2021 – Winner - Eco Angel
- Enviropaedia Eco-Logic Awards 2021 - Top 3 Finalist - Water Conservation
- Mail & Guardian Greening the Future Awards – Safe Guarding the Quality of Water
- Climate 360 Competition – Winner - Biodiversity

Join the Riverlution!

Water processing plant plumbs new depths

PUMPING and processing water for human and industrial use can be something of a challenge when the customer's facility, located on one of the richest sources of potassium-bearing salts used in the production of sulphate of potash (SOP) fertiliser, is located 120m below sea level in a region of the Horn of Africa known for the hottest year-round average temperatures and almost complete lack of annual rainfall.

The Colluli Mine Share Company (CMSC) Potash Mine, a joint venture between the Eritrea National Mining Company (ENAMCO) and Danakali, is located in Eritrea's Danakil Depression, approximately 230km by road from the port of Massawa.

The mine will mine sylvinite, carnallitite and kainitite, to produce high-grade SOP fertiliser for local and export markets.

Colluli Mine's resources have an expected lifespan of about 200 years and the relatively low cost of mining (which takes place from the surface rather than underground) combined with innovations in design the US$302 million mine is expected to become a leading producer of high-quality fertiliser for world markets.

However, the design and construction of the mine is not without its challenges. The arid climate, lack of fresh water sources, almost non-existent rainfall, and high year-round temperatures forced the Project Engineering Team to think outside of the box for its water processing requirements. Danakali approached WEC Projects, a South African EPC contractor specialising in engineering solutions for water and wastewater treatment.

WEC Projects worked with Danakali's Project Engineering Team for two years in designing a processing solution that would produce both potable and industrial water for the construction crews building the mine as well as mine staff operating the facility once it has been completed.

COVID-19 Delays

The US$2 million project was awarded to WEC Projects in 2019 for delivery in April 2020. However, the COVID-19 pandemic forced the project to be put on hold until May 2021.

All engineering design and procurement has been completed and the plant is currently being assembled. Delivery will be ready in the last quarter of 2021. Completion of the project is expected by January 2022.

Water with innovation

The final design of the water processing plant required considerable customisation to meet the challenges of both the customer's requirements as well as the environmental demands of the region.

The plant will produce a total of 24m³ of water per hour, 7.5m³/h of which will be for potable use. The water is pumped from boreholes and contains very high concentrations of dissolved salts and sediment. It's temperature also hovers around 40°C, making processing even more of a challenge. The pumped water is first fed into a coarse strainer to remove any larger particulates and then stored in a 20-kilolitre tank prior to oxidation. Air is used to both cool the water to a processable temperature as well as to help remove iron through oxidation. An ultrafiltration system using ceramic filters was chosen for this project.

The new technology allows for easier cleaning and descaling of the filters and is better able to cope with the higher temperatures experienced at the facility. The containerised plant has additionally been insulated to ensure optimum operation under such harsh conditions.

The ultrafiltered water then undergoes the process of reverse osmosis. The high levels of dissolved solids of the borehole water maintains salination levels almost the same as seawater.

The water is fed through the reverse osmosis system twice - the first pass removes 95% - 98% of the salts and the bulk of this water is then fed to the mine facility for industrial use. Approximately a third of the water undergoes a second reverse osmosis process, predominantly to remove boron, making it suitable for human consumption (potable). The potable water is then remineralised and chlorinated.

Lessening industrial water usage

THE National Cleaner Production Centre South Africa (NCPC-SA) has announced the release of a series of industrial water efficiency guides and tools, available freely on their website. The tools have been developed and shared for use by any industry or organisation that seeks to reduce water consumption in their operations, and learn practical skills to save on water bills.

The NCPC-SA, which is an industry support programme hosted at the Council for Scientific and Industrial Research (CSIR), will be introducing the tools to industry at an online workshop on 17 February 2022.

"We intend to simplify the implementation of water efficiency for the industry whilst securing this scarce resource for the future and ultimately help companies realise savings through reduced usage," explains Lindani Ncwane, Project Manager leading the industrial water efficiency project at the NCPC-SA.

The water efficiency best practice guide and the industrial water efficiency assessment guide has been developed in collaboration with the CSIR Water Centre and currently available for download and application on the NCPC-SA website at no cost to users. "While these tools were developed with a focus on the agro-processing sector, they can be used across other industries to reduce effluent water and save costs," said Ncwane.

A further tool that will be added to those being launched in February is a monitoring and metering guide that was developed in partnership with the International Finance Corporation (IFC).

The industrial water work of the NCPC-SA

Between 2013 and 2018, the NCPC-SA conducted 92 industrial water efficiency assessments in the agro-processing sector to stop water losses and promote operational change among other interventions. The sector is heavily dependent on water for its processes to produce end-products. Following a successful implementation, the NCPC-SA developed tools and best practice guides to help mitigate industrial water use challenges.

A rising need to implement Resource Efficient Cleaner Production (RECP) practices

According to the Department of Water and Sanitation in the National Water and Sanitation Master Plan (NWSMP) of October 2018, 61% of water resources are used in agricultural irrigation, 27% in households while other sectors account for about 10%.

The NCPC-SA has developed similar tools on Resource Efficient Cleaner Production (RECP) interventions including energy and material efficiency. Companies that have embraced the recommendations and the guidance from the tools have saved immensely, increased their competitive advantage and operate sustainably.

"The effects of climate change are evident and cannot be ignored. As a country, we must conserve our existing resources and do our best to reverse the damage caused to the environment by promoting industrial resource efficiency," Ncwane adds.

To find out more about the work of the NCPC-SA and to attend workshops visit https://www.industrialefficiency.co.za/

Conference highlights water's role in economic recovery post Covid

THE South African water sector offers huge potential for enabling economic recovery, combined with a quick turnaround, to ensure a greener economy post COVID-19.

How this recovery can be achieved was the focus of the 7th Annual Water Stewardship Conference, which took place in November 2021. The event brought together representatives from government, industry, civil society and development partners to explore how investments in South Africa's water sector can be leveraged to generate sustained economic growth, employment and long-term wellbeing.

This year's topic of "Water Stewardship in Action: A Journey to Economic Recovery", unpacked what needs to be done to create robust governance for sustainable economic recovery and the national levers for anchoring water stewardship action to ensure initiatives and water investments support a post-COVID 19 green recovery.

The first day of the event sought to inspire further action and collaboration on the journey to economic recovery. The focus was on the economic regulation of water, ongoing structural reforms for enhanced management of the water sector and the economics of ecosystems. The second day highlighted the global discourse on stewardship and the numerous water stewardship initiatives taking place from local to national scale across the country. It also profiled the distinct work occurring at each level.

Why is a green economic recovery important?

The South African water sector struggles with financial challenges and capacity restrictions, constraining its ability to bridge the service delivery gap, a situation exacerbated by the impacts of the COVID-19 pandemic. These challenges are further aggravated by a lack of accountability linked to the governance, management, and oversight of the sector itself.

The National Water and Sanitation Master Plan indicates that only 65 percent of South Africans have access to safe and reliable water services, while 14.1 million people lack access to decent sanitation. Yet, the Master Plan also contains the solutions to address these issues, stating: "A turn-around towards financial sustainability is not optional." The Master Plans also calls for enhanced revenue streams combined with cost reduction and explores different funding models and innovative technologies. Importantly, it also gives the private sector an opportunity to invest in water and wastewater projects.

With water as a key enabler of economic growth, there is an opportunity to leverage green and sustainable investments in the sector to support South Africa's efforts to build back better. Further, partnerships between government, the private sector, academia as well as national and international financing institutions and facilities provides the institutional and financial strength to get it done.

100 million litres / day water re-use project

***Benoit Le Roy**, Director of Operations at Nexus Water Alchemy (Pty) Ltd. reports on water re-use progress in Cape Town.*

"AFTER 25 years of rigorous economic and environmental studies, technical research and planning, the Faure New Water Scheme (FNWS) was identified as the best opportunity for water reuse in Cape Town. The Faure New Water Scheme will receive source water (treated wastewater effluent) from the Zandvliet Wastewater Treatment Plant

The Zandvliet plant is a cost-effective location, with sufficient volumes of wastewater which doesn't come from heavy industry which would be more challenging to treat. It is being upgraded to include enhanced treatment processes that will ensure a high quality of source water for the reuse scheme. The source water from Zandvliet will be piped to a new advanced purification plant located at to the existing Faure Water Treatment Plant, 5 km away.

The advanced purification plant will produce up to 100 million litres of clean drinking water per day. This water will initially be blended with raw water from dams, with a maximum ratio of 20% reuse water and 80% dam water. Then the blended water is treated once more by the conventional processes of the existing Faure Water Treatment Plant, before being stored in the Faure reservoir. From there, the distribution network will have the flexibility to supply this water widely across most of Cape Town."

More information is contained in a new publication: https://resource.capetown.gov.za/documentcentre/Documents/Graphics%20and%20educational%20material/CCT_Water_Reuse_Booklet.pdf

SA Water Chamber 2021 year end message

THE challenges all sectors face are far more difficult to address than any of us could imagine, however there is a vibrant water sector with many reasons to have hope. The water sector globally is thriving despite the pandemic with major infrastructure budgets announced to mitigate climate change, rapid urbanisation and ageing infrastructure. In South Africa however we are still struggling with government's slow implementation whilst over a third of our municipalities have either collapsed totally or partially on an ongoing basis to provide continuous water and sanitation services in accordance with the rule of law as a minimum level of services. It is against this background that the SA Water Chamber was established as we simply cannot allow this decline to continue accelerating as it feeds economic decline directly and our deindustrialisation and unemployment crisis fully underpin this statement, water is not only life, but also the fundamental economic enabler/lubricant.

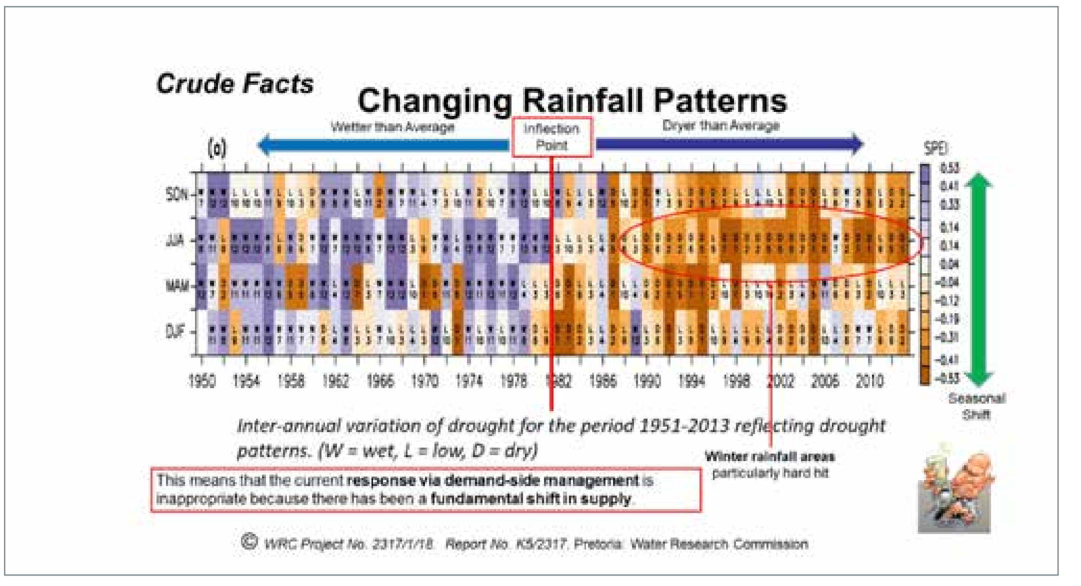
The water and sanitation infrastructure gap was quoted by government as R900 billion in 2018 and is probably well in excess of R1 000 billion in 2022 with little visible progress in major water and sanitation infrastructure projects. Apart from inculcating an enabling environment to implement the master plan, sufficient economic activity is required to fund the infrastructure where paying customers need to increase and not decrease as unemployment ravages our economy and fiscus. So, the stimulation of the economy via infrastructure is absolutely necessary to unlock our water security, why it has not happened is for the following high-level issues in our opinion as a business a chamber:

- Regulatory framework makes the water supply chain uninvestible.
- Ring fencing of water revenues and costs are not effected as a rule.
- Lack of capacity at national, provincial and local government to contract and implement infrastructure projects.

The solutions that we propose to mitigate these issues are:

- Establishment of an IWR, Independent Water Regulator, like all other sectors have in SA.
- SPV's, Special Purpose Vehicles, are established at various levels that will ring fence revenues and costs.
- A national implementation agency that is capacitated by a public-private partnership.

As a chamber we have been involved in several government policy workshops with the latest in culminating in the NIP 2050, National Infrastructure Plan 2050, that uses all of our proposed mitigation activities listed above plus more. What is encouraging is that water is one of the four critical infrastructure pillars in the NIP 2050. So, where is the nip 2050? The draft was gazetted in August 2021 for comments and supposedly sent to cabinet for ratification in November 2021, no news despite our best efforts. There is a new mood in South Africa after the local elections that have certainly highlighted that water services were the top issues for voters, actually the top three issues voters polled showed that water was their biggest factor in deciding who to vote for. So, water services are top of the agenda at municipal level where local government is mandated by the constitution to deliver water services and failing as we all know. This problem is actually the very catalyst for reinvigoration of the water infrastructure sector, and we believe will assist us to actually make progress in the rapid implementation of the master plan with the NIP 2050 the catalyst supported fully by the SA Water Chamber. The NIP 2050 has a very strong PSP, private sector participation, theme in it which is reformatory in the absolute extreme given the total public sector monopoly and refusal to allow private sector participation meaningfully to date. Many other sectors have thrived once the public monopolies have been removed, telecommunications ne of the best examples to date.



This pictogram illustrates the drying out of South Africa that is adding to our water security issues:

Whilst 2021 was marred by the pandemic, GDP decline and looting, the late year elections have shown us clearly that South Africans are ready and want change with water services top of the agenda. As a chamber we have to use this opportunity to gather more momentum, so momentum = mass X velocity. Mass is our membership where we have been unable to get past the twenty members despite widespread support for the chamber by the water sector, allied associations and institutes and government. There is an inherent distrust in the water sector of government and this we believe we should be able to overcome in 2022 once the NIP 2050 is published.

We have also seen additional signs of movement in the sector with very well publicised water services failures country wide with Gauteng the epicentre of ongoing water shortages, outages and general chaos with government hospitals severely impacted in a time when all hospitals need to be overtly functional so as to cater for the waves of pandemic driven admissions. What this has done has afforded us the opportunity with media to promote the mission of instilling water security and creating a larger mass of active citizenry that is demanding effective water services from government and its mandated water services providers. Despite out dams being relatively full that supply Gauteng, the reliable availability of water remains a dream for so many.

Therein lies the opportunity to reinvent our entire water delivery process, increase efficiencies and drive the digitisation of water which is the fastest growing initiative globally.

We are finalising the DTIC's Water & Sanitation Reindustrialisation Plan this month that bodes well for the onshoring of our water industry in South Africa.

Reducing pumping system TCO – three valuable steps

By Jaque Mare, Product Manager: VSD & Soft Starters, Industry Business at Schneider Electric

ENERGY costs remain a prevalent factor in the total cost of ownership (TCO) of industrial pumping systems, often accounting for 40% of overall consumption. However, it is possible to reduce the energy consumption of pumping by at least 30 percent if the appropriate energy management practices are put in place.

The first is step is for an organisation to acknowledge the high energy costs of pumping systems and introducing proper steps to implement cost reductions through efficiency improvements. Furthermore, several barriers need to be addressed:

Lack of proper metrics - energy efficiency is traditionally not used in assessing performance; often energy procurement and efficient operations aren't consistent or standardised metrics are not utilised;

Knowledge gap – a lack of awareness in energy efficiency opportunities is prevalent and as a result, potential savings and other benefits are missed; and

Fear of investment – operations personnel often struggle to present attractive (large or small) investments to their finance organisations.

What is required is the implementation of a sound energy management strategy which features practical and attainable steps to address the reduction of TCO, whilst realising the benefits of an efficient pumping system

Step 1 - Energy Efficiency Management

Industrial production cycles continue to be influenced by variables such as market demand, the weather, local regulations, and energy supply. This means that factory and building operators need to understand how and when energy is used to minimise consumption and related costs.

Picture credit: Pumps Africa.

In the case of pumping systems, efficiency is impacted by:

A mismatch between the pump deployed and the actual system requirement (i.e.: undersized or oversized); and

The improper use of throttling valves and damper technologies to control the flow of liquids.

Fortunately, the above can be remedied by implementing simple actions such as replacing fixed drives with variable speed drives. Connected to a pump, a variable speed drive can control speed, pressure, and flow in conjunction with dynamic process and production requirements.

Step 2: Asset Management

The maintenance cost of physical assets can represent as much as 25 percent of TCO. Maintenance, however, is non-negotiable as failure to do so can be catastrophic, resulting in costly downtime and production loss.

In pumping installations, many moving parts mean that proper maintenance of motors, drives, pumps, and associated pipes is crucial. Numerous steps can be taken to assure that maintenance costs are kept at a minimum while integrity of systems is kept stable:

All pumps should be operated within the parameters of a given pump's specifications (often stated in the pump supplier's instruction manual/ data sheet);

Variable speed drives can help to keep the operating point close to the BEP (best efficiency point) and protect the pump against destructive forces generated by inefficiencies.

Monitoring the operating point of a pump and its efficiency provides diagnostics that can help predict when potential system problems will occur.

Step 3: Energy Cost Management

Building owners, water/wastewater, and oil and gas facility operators are presented with utility bills that have multiple components.

However, by implementing best practices for utility bill management, energy cost reduction can be realised. Below are a few simple actions:

Review the utility contract to understand the charges associated with the bill and how it can be controlled.

Adjust the timing of energy usage from the peak rate period to the off-peak period as much as possible

Ensure the correct pump system size (drive + motor + pump).

Reduce the amount of non-revenue generating energy consumption.

Applying smart motor starting methods (Variable speed drives) to motor and pump systems

By pursuing best practices in energy efficiency management, asset management, and energy cost management, the TCO of pumping system networks can be reduced by up to 20 percent.

Moreover, one simple technology, the variable speed drive with embedded energy management functionality, has the capability of being a major contributor to achieving this TCO target.

Massive platinum project features 50 pumps

IN August 2020, the modular process plant supplier ProProcess was awarded an engineering, procurement, and construction contract for Anglo American Platinum's new Modular Fines Flotation Pilot Plant. As a preferred Anglo American vendor, Verder supplied peristaltic pumps to ProProcess on the project.

This test facility for platinum concentrate flowsheet optimisation had to be designed with maximum road transportability in mind, as it is earmarked to be moved around various concentrator sites owned by Anglo. To this end, the entire plant was fitted onto 16 road transportable ISO frame skids conforming to 40 foot marine container dimensions. The plant consists of more than 40 flotation cells (including a high intensity flotation cell), a mill, approximately 30 tanks (some agitated), approximately 50 pumps (including centrifugal slurry, peristaltic, and vertical spindle), blowers, compressors, and other items.

The pumps selected on this project included the Verderflex VF65, Dura 25, Dura 35 and Dura 45.

"Pilot plants have much less stringent equipment requirements than production plants and these needs to be taken into consideration to avoid over designing the plant, thus unnecessarily escalating the capital outlay. This required a lot of out of the box thinking and many new ideas and concepts were explored to ensure a built-for-purpose plant," says Stefan van Dyk, project manager at ProProcess.

According to Kean Southern, mechanical lead at ProProcess, the firm applied its specialised modular approach to the design of this plant for simplified site installation and ease of transport.

"All equipment is pre-mounted, piped up, and tested at our workshop before shipment to site. Once testing is complete, all that is required is for flexible, interconnecting piping between the frames to be disconnected - which is made easy with the use of flanges and claw couplings. Given the numerous pipe sections run between frames, each connection of flexible hose needed to be tagged to ensure the correct hoses were reconnected during assembly. Since the plant arrives on site already partially assembled, site installation is a breeze," says Southern.

To avoid the construction of complex concrete bunded areas at each test site location, ProProcess also designed structural bunds in ISO frame format. These bunds, complete with removable sump pumps, are transported separately, and essentially form the 'foundation' for the plant structure when placed on a flat surface. Since they are supported at the four corners of the ISO frames, the bund 'foundation' can tolerate a certain amount of unevenness, which is compensated for by shimming the corners to ensure a level final base for the ISO frames making up the balance of the plant.

Revitalising the foundry industry

LOCALISATION in the capital equipment and valves industry presents enormous economic opportunities for companies along the value chain, according to the National Foundry Technology Network (NFTN).

As an industry support programme, the NFTN has a mandate to support the steadily declining metal castings (or foundry) industry. Project manager responsible for technology transfer and localisation at the NFTN, Isidore Kilongozi, believes that both upstream and downstream producers will need to work together in order to unlock synergy within the supply chain.

"The South African government's localisation strategy aims to reduce imports by at least 20%. There are approximately 120 active foundries across SA and each of them have a vital role to play in the manufacturing value chain, particularly in achieving targets of local content," says Kilongozi.

Given their important contribution to the supply chain and the broader economy, there is a need to support improved foundry competitiveness and the industrialisation of new technologies and products.

Opportunity to increase local content

The mandate of the NFTN includes providing technical support to allow local foundries to meet the specifications and requirements of a South African assemblers and original equipment manufacturers (OEMs). "We are willing to assist foundries to improve across their operations, including design, fabrication and installation of parts," explains Kilongozi, a seasoned metallurgist and foundry expert.

"When OEMs and other manufacturers only order one or two small parts of a component, is not financially viable for a foundry. However, if we can bring together the OEMs and suitable foundries, there is an opportunity to supply more than just one of the many different parts," he says.

How can the NFTN assist

Together with the Council for Scientific Industrial Research (CSIR), the host entity of the NFTN, the programme has the expertise to advise and support multiple companies across the sector to be more competitive and sustainable to serve the manufacturing sector better. The National Cleaner Production Centre South Africa (NCPC-SA) is also on hand to assist in improving efficiencies such as energy or water in this sector.

"Our role at the NFTN and the CSIR is to equip and capacitate foundries in order to allow them to participate in the production of the volumes required for localisation. We also advise the government on issues of resolving import leakage," concludes Kilongozi.

To increase foundry competitiveness in the industry, the NFTN is planning interventions during 2022 that are aimed at equipping a number of foundries that manufacture capital equipment (valves and pumps) to meet the suppler requirements for parts used in the assembling of valves, including water, oil, gas, high pressure and slurry valves.

For manufacturers who would be interested to be linked up with a local foundry, kindly contact us at nftn@csir.co.za or Communication Manager Julie Wells at JWells@csir.co.za

New filtration system solves water quality challenges

THE importance of water quality cannot be understated in food and agricultural applications, which is why businesses in these sectors must comply with SANS 241-1:2015 potable water standard. When a fruit packing business in Hoedspruit, Limpopo, began experiencing challenges meeting this standard with their existing sand filtration system to treat incoming water from the Blyde River pipeline, they contacted Allmech, South African manufacturer of boilers and supplier of water treatment components, to assist.

"The customer was experiencing problems with turbidity, colour, Faecal Coliform and Escherichia coli (E.coli) in the water, and requested our assistance in supplying a new river water filtration plant," explains Anelia Hough, water treatment consultant at Allmech. "Their packing house operations during peak production time are running 24/7 with a water flow demand of 8 500 l/h. Our site analysis indicated that the sand filtration system was insufficient to supply the peak demand on site. Manual chlorine dosing was implemented in the feed line to the factory and office and the Allmech team designed a new water treatment plan to treat the key parameters to ensure compliance with SANS 241-1:2015."

The maintenance coordinator at the agricultural client, says that the Allmech team was patient and helpful in steering the company through its options and getting the new system approved by the directors. "Once we had approvals in place, the installation was very quick and although with any new system there are some teething issues, since installing the new system we've had no issues meeting the standards we need to adhere to when washing and preparing fruit," he says. "The aftersales service and support from Allmech has also been good."

Improved filtration with a cost-effective system

"We proposed a water treatment plant using filtration media that offers capabilities to remove 90% to 95% of the solids and chemicals, as well as reducing biological oxygen demand (BOD)," says Hough. "This media provides a practical, low-cost solution and double the performance of a sand filter. In fact, it's up to 100 times better at removing sub-5 micron particles."

The new system is verified to achieve log 3 reduction (1 000 times) down to 4 microns, with no coagulation or flocculation, and no biofouling means greatly reduced Legionella risk from the filter.

"Product water will have at least 50% lower chlorine oxidation demand than an equivalent sand filter, so there's lower concentration of disinfection by products including trihalomethanes (THMs)," says Hough.

The filtration media is also expected to last the life of the filtration system, so there is little maintenance required from that point of view."

Allmech further proposed automated disinfection via inline dosing to ensure no bacterial growth in reservoir tanks or in the feed line to the factory and offices. Allmech conducted the turn-key construction and installation of the water treatment plant in December 2020 and the plant has been fully operational since January 2021.

The Latest SANAS testing laboratory report was completed in July 2021 indicating no Faecal Coliform and E.coli present after water treatment. The turbidity in N.T.U raw water sample is 125 after water treatment plant <1 (SANS 241:15 Class 1 Standard <5). The colour in PtCo units prior to the installation of the treatment plant was 43 (the required limit is <15) and since installation as achieved a rating of 4.

"We are grateful for the opportunity to assist our client and always enjoy designing site-specific solutions to help address our customers' water quality challenges. The best reward is when the client implements the solutions and operates the plant within specifications," Hough concludes.

Allmech is also the only authorised South African agent for Runxin valves, produced by the global Wenzhou Runxin Manufacturing Machine Co., headquartered in China.

Custom rubber hoses

WEIR Minerals Africa designs and builds mining hoses for customers from 50 mm to 1 000 mm nominal bore up to 10 metres in length and up to 1 100 mm bends.

"Our state-of-the-art manufacturing facility in Alrode, Gauteng, comprises advanced semi-automated processes to produce both hard wall hoses, soft wall hoses and bends," says Yatheen Budhu, product manager rubber products, hoses and spools at Weir Minerals Africa. "With a decade of investment in semi-automated building equipment and training, we can ensure high levels of safety, manufacturing consistency and quality in our custom-engineered products."

These hoses are designed to the specifications of customers around the world, using an option of Linatex®, Linard®, Linagard® and Linacure® abrasion-resistant internal wear liners. The hard wall mining hose is built for suction and discharge applications, with a heavy spring steel wire helix to cater for high dynamic loads. For discharge applications with no vacuum or suction that could collapse the hose, the soft wall mining hose is usually used as it allows for ease of movement and flexibility.

"Among the innovations we have introduced is a wear-indicator system, for critical applications where unexpected hose failure carries an unacceptable level of risk," says Budhu. "The wear-indicator system gives operators early warning of wear on the liner, and allows proactive replacement to be planned and conducted."

Weir Minerals Africa's world class local manufacturing capability gives a number of benefits to mining companies, he says. These include a quicker lead time and a valuable contribution to Mining Charter compliance.

"Having our manufacturing facilities relatively close to our customers also facilitates our engineered-to-order approach," he says. "We spend time with customers whenever possible – through our comprehensive branch network – to understand their conditions and requirements."

For mines across the commodity spectrum, Weir Minerals' rubber hoses deliver long wear life – from demanding conditions in mineral sands dredging operations to tailings, cyclone feed or thickener underflow.

"Our hoses must deal not only with abrasive materials, but also unexpected foreign objects in slurry, some of which may be sharp," he says. "Nonetheless, as an example, we have seen our hoses in mineral sands applications last up to seven years – considerably longer than the customer is used to."

The Weir Minerals state-of-the-art automated hose manufacturing facility in Alrode.

The company also manufactures related equipment like flexible distance pieces – instead of normal bellows – to customer specifications, notes Budhu. With its Linatex® wear liner, these items last considerably longer. In addition, they can be used to connect pipework that is not well aligned.

Weir Minerals Africa has an extensive footprint across the continent to deliver efficient technical support for its range of rubber lined hoses. This technical experience, coupled with the premium quality liners and the consistency achieved through using the semi-automated manufacturing process gives customers the assurance of a well-engineered product for the application.

Largest dewatering pump delivered

SYKES distributor Integrated Pump Rental, recently delivered its largest unit to date - a Sykes MH300 pump with stainless steel pump end was built at the company's Jet Park facility.

Driven by a Kirloskar DV8 engine, this auto-prime Sykes pump unit was fitted with a custom engineered fuel tank and skid, according to Steve du Toit, rental development manager.

"The sheer scale of the project is demonstrated by the unit's final dry weight of about 8 tons," says du Toit. "Measuring nearly 7 m long, this pump set is 2,5 m wide and 2 m high."

With a pumping capacity of 500 l/s at a head of 40 m, the Sykes MH300 has been delivered to a customer in the mining sector where it will dewater an open pit to ensure that no flooding occurs during the rainy season. The presence of abrasive particles in the water required that the inside of the pump be coated with tungsten, while the stainless steel wet end would resist acidity.

The Sykes MH300 is the top of Sykes' medium-head range, with a 300 mm – or 12-inch – suction or discharge. This compares with the 6-inch suction of the well-known Sykes CP150 model popular among contractors. A generous 3,000 litre fuel tank was included in the design to allow for long running time, and this reduces the monitoring and refilling necessary by mine personnel.

Built in less than two months, the pump's vacuum capabilities were extensively tested in-house before delivery.

"The pump was built for plug-and-play on site, with an auto-prime function for added ease of use," du Toit says. "Supplied with the necessary pipework, it can be easily connected and immediately operated."

Largest Sykes pump delivered.

RENT A BOILER IN A CONTAINER – IT'S EASY!

Now, there is no need to blow off steam when you need a functional boiler and don't have one. We understand just how important it is to keep your business on track, especially when there is an emergency.

Combustion Technology can provide you with a modern, efficient and environmentally friendly solution to meet any of your combustion or heating challenges.

We offer your business peace of mind with our tried and tested boiler rentals. Whether you have a plant shut down, are renovating or expanding your facility, or for any emergency at all, don't stress or shut down your operation – just call the boiler rental experts!

With over 35 years' experience, we have developed and engineered a unique and superior boiler rental solution that is totally evolved compared to the other options that are out there. Our boilers are adaptable and can be tailored for emergencies or any other requirements for both short- or long-term rentals.

Portable boiler containers are completely enclosed and ready to start working upon delivery. There is no additional time or expense needed to unload the system or protect it from the weather. The boiler and all its controls are neatly installed inside a self-sufficient mobile container and are ready to use in a matter of minutes. Each easy-to-use unit is designed for efficiency, comfort and convenience. They are simple to install and very portable. And everything is plug-and-play. So simple.

Our all-in-one solution: STEAM SUPPLY PLUS 24/7 BOILER MANAGEMENT SERVICE

Who needs a rental boiler?

Pieter Wentzel, Project Engineer at Combustion Technology explains: "Since we advertised this service on our website, we are inundated with enquiries from all over the country regarding our boiler rentals. Some people want to rent a boiler while their own boilers are being serviced or are out of action for a month or two. Others don't find it viable buying a permanent boiler as they only need a temporary solution on site that can be removed once their project is completed. We even rent boilers to customers who have ordered boilers and need something in the interim while waiting on new equipment to be delivered."

What makes the Combustion Technology rental solution so popular?

"Our customers love the fact that it is such a simple solution in a container with an easy set-up and installation procedure. Best of all is, that the customers are amazed that they don't have to be present on site to manage boiler operations," Wentzel continues, "they simply allow us to drop the box off and get the job done! We also keep an eye on it as we track and pre-empt any issues to prevent downtime and breakdowns, not just with the boiler, but in general at their site.",

"Unlike our competitors who rent out boilers, our mobile rentals come with all the ancillaries. So, no need to buy extra equipment such as a feedwater tank, fuel tank, stack, water treatment system, control panel and burner, that you may end up not using in the long term. Our Rentals burn 8-12% less fuel than any other Competitor!"

For what length of time can you rent a boiler?

Short- or long-term rentals are always available. You can rent for any period from 1 month upwards, some customers even rent for 2 years. We offer simple, flexible solutions to suit every customer's needs.

You can simply rent a container with a boiler from us, or we can build one for you and you can buy it after trying it.

Customised solutions

Not only do we rent out containerised boilers, but we also build and sell customised containers based on your requirements, demands and specifications. No job is too big or too small.

Pieter Wentzel added with a proud smile, "as one of our customers remarked, our complete container boiler system is the simplest, neatest and most uncomplicated set-up he has ever seen. He was super impressed, so we must be doing something right".

BENEFITS OF RENTING A BOILER:

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No investment required – make rapid and non-binding decisions.

Transparency
We offer a pre-installation consultation with no nasty surprises. The costs are fixed which allows you to plan.

You get what you need
- Each container is fully kitted with powerful, reliable, state-of-the-art boiler technology and ancillary equipment.
- With our gas partners, we can arrange for an easy supply and connection to gas – we comply with SANS 329 requirements.
- All our containerised boilers are dual-fuel ready.
- All our boilers output to a maximum capacity requirements and best efficiency.
- Water treatment system.

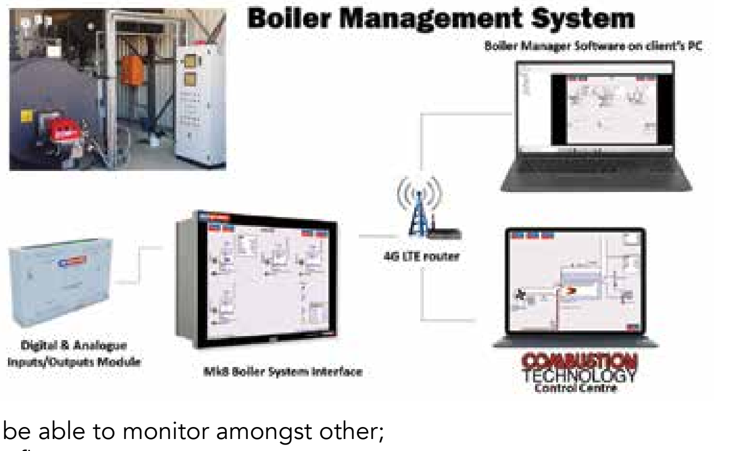
Prompt delivery and installation
Our rental boilers are always available and are ready for installation. Our capable and dedicated team will deliver the boiler directly to your location and will do whatever it takes to get the boiler up and running in no time at all.

Training and start-up service
Onsite boiler operator training is offered from Combustion Technology.

Guarantee
Our boilers are certified and comply with highest energy efficiency, 8-12% less fuel consumption, lowest emissions and highest safety regulations.

24/7 Boiler Management Service

All our mobile boilers include the Combustion Technology Boiler System Interface that enables full management of all boiler key functions. From the comfort of your office or home kilometres away, you will be able to track and monitor what is happening on site in real time.



You will be able to monitor amongst other;
- Steam flow metering.
- Water level control.
- Fuel consumption compared to steam generation.
- Fuel pressure.
- Stack temperature
- Ideal emissions (O_2, CO_2, CO).
- Tracking and monitoring of any element that interferes with production / output.

There are built-in alarms that will alert our engineers at the Combustion Technology Head Office if set points drift off commissioned values. Immediate interventions are actioned to ensure that the highest efficiencies are maintained.

For all enquiries about temporary or permanent steam requirements or technical advice throughout your planning process, contact us for expert advice. Contact us on:

+27 21 715 3171
info@combustiontechnology.co.za
www.combustiontechnology.co.za

Lower emission levels with NOx abatement solution roll-out

SINCE implementing one of the first nitrogen oxide (NOx) abatement projects in the country in 2019, Babcock International has completed a further three boiler installations at a large industrial petrochemical plant, reaching emission levels of almost 40% lower than the legal requirements.

Nitrogen oxides are harmful gases that form when fuel is burned at high temperatures emitted through combustion of fossil fuels, which remain the primary source of South Africa's power. To improve air quality, nations around the world have committed to lower NOx emissions through legislation that determines acceptable levels of NOx in the atmosphere. In South Africa, the National Environmental Management: Air Quality Act calls for maximum NOx levels of 750 mg/Nm^3 for solid fuel combustion installations with a thermal rating of more than 50 MW.

Babcock's first NOx abatement installation, which achieved levels of 651 mg/Nm^3, received the South African National Energy Association (SANEA) Energy Project Award in 2019. Three additional iterations have been completed since the first installation, with the most recent recording the greatest success where performance tests delivered post-abatement NOx emissions of 469 mg/Nm3 – making this among the lowest NOx emissions for a pulverised coal (PC)-fired boiler installation in South Africa.

Juan Gerber, Process Engineering Manager at Babcock, explains that PC-fired boilers are generally larger utility-type boilers that generate steam, which in turn generates power. To regulate NOx emissions, new power plants are fitted with low NOx burners, while older PC-fired boilers would require to be retrofitted to comply with legislation by 2025 in order to continue operating.

"These boilers generate power for the client's own use and for resale, so in the event the boilers need to be switched off, the consequences are immense," says Gerber. "We worked with Babcock & Wilcox (B&W) to provide a solution to ensure the client's petrochemical plant, which comprises 12 boilers in total, is compliant with the legal requirements. B&W has more than 50 years of experience in installing low NOx combustion systems for both new and retrofit boiler applications around the world."

Gerber says that B&W's DRB-XCL® low NOx burners were selected to help meet the new emissions limits. One of the main advantages of the DRB-XCL burner is that the internals of the burner are customisable and burner performance can be optimised in situ by adjusting components. This enabled priority to initially be given to stable operation, and upon site testing, boiler system settings and burner internals could be adjusted incrementally until the optimum balance between stability and minimum NOx was achieved.

"During the final performance test of the installation in the fourth iteration, NOx emissions were reduced by more than 40 percent of the targeted emissions level," says Gerber. He explains that the system operators are a vital link in the performance of the boilers, as they are able to monitor and adjust the settings to optimise the boiler's performance. Babcock provided training for operators with regard to how the technology works and what is required from operators for the system to be optimised.

Reflecting on the performance and lessons learnt since the first installation, Matimba Mangotlo, Project Engineer for Babcock, says that the hardware has proven to be extremely reliable, which is critical for this type of plant.

He explains that the installations have to take place within planned outages so time is of the essence. "We have refined our project delivery for every boiler that is completed, and have demonstrated that the project can be implemented successfully over 15 months in parallel with other boilers, which is an improvement of 17 months compared to the initial installation," says Mangotlo.

Going green with a multi-pronged approach

Local food and beverage factory upgrades slashes carbon footprint

DAWIE Kriel, Head of Business Development at EP Refrigeration – a division of Energy Partners and part of the PSG group of companies – cites Clover's Queensburgh factory as an example of what can be achieved. "We were contracted to upgrade the facility with a new, state-of-the-art 10MW ammonia refrigeration system which will significantly cut its energy usage and increase the plant's coefficient of performance by 30%." The company also collaborated with EP Steam to install a more efficient boiler system, while EP Power was brought in to construct a 1.8MWp roof-mounted solar photovoltaic (PV) system to supply part of the refrigeration system's electricity demand in what we have termed solar assisted refrigeration. "This multi-pronged approach is making a significant impact in reducing the facility's carbon footprint," says Kriel.

Kriel says that the client had three very important requirements for this build. "In line with the company's focus on sustainability, we had to use natural refrigerants. Secondly, we had to make sure that this new system used at least a third less grid-tied energy than the baseline refrigeration plant. We accomplished this with second-to-second efficiency monitoring and adding solar power assist to the new refrigeration system. Thirdly, we had to ensure the installation of the new system was seamless, without impacting on their day-to-day production.

Jonathan Probert, Head of Business Development for EP Steam explains that the plant's water heating process is also taking a new direction. "Waste heat from the refrigeration system's oil cooling circuit is being used to pre-heat the boiler feed water, which already reduces the facility's overall coal consumption. Additionally, we've employed air-preheaters and economisers on each boiler to maximise energy efficiency. This, combined with EP's premium boiler combustion control systems – designed in-house – will reduce coal consumption to an absolute minimum." This move away from coal is in line with industry trends and with COP26 objectives.

He reports that the steam system design has been ongoing since inception and is now also nearing completion, with the entire system expected to be fully operational by July 2022.

Probert also points out that the entire system has been designed with future upgrades in mind. "The design of the refrigeration system takes into account future expansions up to 50% of the current capacity. The steam system has been designed to account for current expected demand as well as an assumed annual growth over the next 20 years. Consideration has also been given to expanding the boiler house by 30% at a later stage."

Anton Pretorius, Group Manager: Product Technology & Technical Services at Clover S.A explains that the upgrades completed by EP Refrigeration and EP Steam, form part of a larger effort. "Project Sencillo is an ongoing R2 billion investment aimed at simplifying and optimising operations of the Clover business through rationalisation of production platforms (equipment and production facilities); consolidating distribution operations to align with our new manufacturing footprint; and to address the migration of the milk source to the coastal region. The project will have a positive socio-economic impact, including the creation of direct and indirect job opportunities through the various investments in the regions."

The project at Clover's Queensburgh factory is a feather in Energy Partners' cap, according to Kriel, and a stellar example of best practice in sustainability issues from multiple fronts. "The unique solution that Energy Partners has offered Clover perfectly demonstrates what a multi-disciplinary energy specialist is able to achieve and we are honoured to have been selected as their partner in a project of this scale," he concludes.

Choosing the right steam boiler for your needs

LIONEL Maasdorp, General Manager at Allmech, a South African manufacturer of boilers and supplier of water treatment components, says that the starting point is to understand how much steam your application requires. "Our recommendation is that if you need anything less than a ton, your best bet is an electrode boiler," he says. "If it's not an option for you – for example if there is no electric power supply – you can look to diesel or gas-powered options. For applications that require more than five tons of steam, you need to look at coal-fired or heavy furnace oil boilers."

Another important consideration is whether your steam requirement is for a constant flow, or if you're working in a batch processing environment. For example, Maasdorp says that one of Allmech's clients in the glass manufacturing industry needed a low average steam generating capacity, but when they looked into the production process, the company realised that significant steam was required at specific intervals. This necessitated a bigger boiler size.

On the other hand, a bakery client was able to cut costs substantially by moving away from diesel-fired boilers to electrode boilers because the maintenance and servicing requirements were much lower. "Electrode boilers are cleaner and don't require as much space (or fuel storage space), and are quicker to reach temperature," says Maasdorp. "They have a lower carbon footprint and only require operator input to switch on and off, rather than requiring two to three people to operate at all times, like a coal-fired boiler. They were thus the perfect choice for the bakery application."

AA-2500 4 ton electrode steam boiler.

Maasdorp advises. "Check that you are buying from a reputable supplier with a good track record, who is able to help with a solution for your specific requirements. When it comes to boilers, there is no such thing as a one-size-fits-all product. Safety is paramount. Look at certification and accreditation. For example, all our boilers are certified to UK BSEN12953 and SANS 347 standards."

An added benefit for Allmech customers is that the company operates a water treatment division and is thus able to supply a comprehensive range of products and services, from the boilers themselves to the valves, chemicals and water softeners required. "We look at the whole picture before recommending a boiler," says Maasdorp. "We can supply anything from a 12kW element boiler to a 2 500kW electrode option."

Allmech supplies boilers throughout South Africa to southern Africa and beyond, with installations in eSwatini, Mauritius, the DRC, Zambia and Saudi Arabia, among other places.

First LNG Delivery to South Africa

LNG tank was offloaded from an MSC containership on November 16.

From The Maritime Executive

SOUTH Africa received its first shipment of liquified natural gas recently, making what is being promoted as a turning point in the efforts to bring the LNG industry to Africa. While the first shipment was just one tank delivered on a containership, DNG Energy Group believes it will be the beginning of the company's operations, which it expects to have fully operational in the first quarter of 2022.

DNG Energy received the consignment of LNG from Rotterdam arriving at the Port of Ngqura on the southern Africa coast on November 16. The tank was transported aboard the MSC containership MSC Brittany and offloaded at the port where the company is preparing to launch its LNG operations.

"The arrival of the LNG consignment is an inflection point for South Africa's energy market, marking a key moment in our shift from coal-fired and oil-fired power generation to cleaner alternatives," said Aldworth Mbalati, CEO of DNG Energy. "Over the next few years, LNG has the potential to drive significant growth and job creation, while helping South Africa meet its targets in reducing greenhouse gas emissions by as much as 30% to 40%."

DNG founded in 2013 is a black-owned African business with a vision to build a pan-African LNG supply network. The company has been focusing on developing the infrastructure for LNG in South Africa, Mozambique, and Nigeria. Its initial focus is on the use of LNG for road and maritime transportation seeking to convert trucks and buses to LNG as a fuel as well as launching a bunkering operation for ships.

The company has commissioned South African Shipyards in Durban to build an 8 000-ton LNG barge that will be moored at the Coega terminal at the Port of Ngqura. According to DNG, this is the largest vessel by weight ever to be built on the African continent and was completed by the end of 2021. The company plans to commission its first floating storage unit in the first quarter of 2022.

DNG Energy has received final authorization from the Transnet National Port Authority (TNPA) in October 2020 to begin liquefied natural gas (LNG) bunkering operations in the Port of Coega, in the Eastern Cape, South Africa. The license gives DNG Energy rights to have its terminal, the floating storage unit in Algoa Bay, which would make it the first in Africa. The company plans to offer off-shore as well as on-shore logistics with ship-to-ship transfers for international ships as well as LNG deliveries within the country.

Gas gensets to power new residential development

AMID the incessant energy crisis in South Africa, Energas has seen a growing appetite for gas-to-power solutions as property developers are increasingly looking for reliable and environmentally-friendly options. Due to an unreliable grid, increasing tariffs and the growing drive towards cleaner energy solutions, Energas product manager Laetitia Jansen van Vuuren says there is a big drive towards gas-to-power solutions by developers and end-users alike.

A developer in Gauteng has recently taken the gas-to-power route, initially installing a single genset supplied by Energas on a new residential development, before adding two more. "The initial scope of the project entailed the supply of one 500 kW R Schmitt Enertec gas generator pre-installed in a 6m steel container with the necessary sound insulation," explains Van Vuuren, adding that two more 500 kW containerised gensets will be installed to increase total generation capacity.

The gensets will be synchronised to the grid and a solar plant. There are plans to add more gas gensets in future as demand increases.

One of the major talking points is the containerised nature of the gensets, which simplifies installation. "The engines are pre-assembled and tested in Germany, before being shipped as a complete unit. On site, auxiliary components such as chimneys and fans can be mounted on top of the container within two days. No building work is required for this solution, except for a foundation on which the containers are mounted," concludes Van Vuuren.

Ed: This feasible off grid solution depends of course to a stable supply of cheap natural gas. The source is available from Mozambique's massive gas fields via the 800km long gas pipeline that traverses Mpumalanga which was designed to serve industries in Gauteng. The establishment of an LNG facility in Saldanha which could serve the Western Cape, and Eskom's standby generators in Atlantis have so far failed to materialise. An opportunity lost?

We value your input

Only through your input can we continue to improve.

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editor@cbn.co.za

Vestas introduces 6.8 MW wind turbine

RENEWABLES are already a critical component in energy systems across the globe with continued scaling and technology development playing a key role in making renewables the dominant energy source in all parts of the world.

For medium to high wind sites, Vestas has introduced the V162-6.8 MW wind turbine of the EnVentus platform.

The V162-6.8 MW is globally applicable and combines an increased power rating and operational flexibility to deliver up to 7% annual energy production (AEP) depending on project-specific conditions. The V162-6.8 MW features flexible power ratings of 6.5 MW, 6.8 MW and 7.2 MW and expanded site applicability through an optional larger CoolerTop. The performance improvements are achieved through enhanced EnVentus powertrain and power conversion systems.

"We take another step forward with the introduction of the V162-6.8 MW, reaching the next level in applicability and scalability. The V162-6.8 MW demonstrates how our modular product development enhances our ability to continuously innovate and lead the industry in developing customisable and sustainable energy solutions that meet our customers' needs", says Anders Nielsen, Vestas Chief Technology Officer.

The V162-6.8 MW will benefit from enhanced transportability and siteability, as it will be based on Vestas' new modularised nacelle concept, where the nacelle structure is divided into the main nacelle house containing the powertrain and the side compartment with the power system including converter and transformer. Both nacelle compartments are dimensionally designed to correspond to general industry logistics standards for road, rail, and ocean transportation with less need for specialised handling.

The EnVentus platform is the next generation of Vestas technology, building on and leveraging proven technology from the 2 MW, 4 MW and 9 MW platforms to meet customisation needs more efficiently through advanced modularity. Since the launch of the EnVentus platform in 2019, Vestas has secured orders for more than 5 GW across 13 different markets on four continents.

SA's renewable energy future: not what you imagined

"...I don't believe that coal power will ever be completely removed..."

THE biggest news for South Africa to emerge from the recently concluded COP 26 UN Climate Change Conference, was the $8.5 billion finance package intended to curtail the country's reliance on coal and upgrade its transmission infrastructure. While this cash injection could put a stop to loadshedding and help South Africa retire some of its coal-fired stations, it is important to understand all that an energy transition like this entails.

Tygue Theron, Head of Business Development at Energy Partners Intelligence – a division of Energy Partners and part of the PSG group of companies – says that a move towards renewable energy is just what the country needs, but South Africans should also understand what this scenario is likely to entail. "Firstly, I don't believe that coal power will ever be completely removed from South Africa's energy mix. Wind and solar power will likely become much larger contributors to our national grid, but there will always be a need for a form of energy generation that can reliably be brought online the moment it is needed. Since both of these renewable energy sources reach their peak production during different times of the day or year, there will always be a need for more consistent baseload energy sources like coal to fill the gaps in renewable energy production."

In addition to this, Theron also notes that consumers and businesses should expect to pay more for their electricity once the national grid has been upgraded. "The most important objective for improving the national power grid, is arguably to eliminate loadshedding (which has already reduced the country's GDP by as much as R450 billion). However, a higher quality of service will also come at a higher cost. This means that there will still be scope for businesses to offset their energy costs through private embedded generation."

Compressor range offers 20% cost savings

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

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

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

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

A screw compressor uses both rollers and thrust bearings with high-tolerance rotors, which operate screws with minimal clearances, thus reducing air leakage and resulting in high volumetric efficiency. However, any of the bearings will wear out over time, inevitably resulting in increased clearances between the rotors and subsequent drops in volumetric performance. This drop in performance equates to a lower air output, varying from manufacturer to manufacturer, which ranges between 30% and 55% over a 10 year period. The performance drop is typically reversed once the screw compressor undergoes maintenance (usually between 40-50 000 hours) substituting all major rolling and thrust components and resetting the compressor to its original tolerances and volumetric performance.

On the other hand, Mattei rotary vane compressors, do not use either rollers or thrust bearings, and rely on hydrodynamic bushings lubricated with oil that do not wear out over time. The injected lubricant, also performs an important sealing action. The advantages of this design are twofold. Firstly there is no loss in volumetric efficiency over time; secondly a Mattei compressor typically operates for over 100 000 hours without requiring maintenance to replace worn-out bearings. This allowed Mattei to extend their compression unit warranty to 10 years with unlimited usage. Finally, with Mattei rotary vane compressors, not only does the performance not diminish over time, but it actually improves after the first 1 000 hours of operating. In this running-in period, the blades undergo a further polishing process removing any last asperities, which initiates a microscopic transfer of material that will last for the full lifetime of the compressor.

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

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

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

Mattei are represented in South Africa by Rotorvane.

On-site O_2 production

THE on-site production or generation of oxygen as opposed to purchasing this gas from a vendor presents a highly cost-effective, safe, space-saving and convenient solution. Atlas Copco's new OGP$^+$ 3-30 PSA (Pressure Swing Adsorption) machines ensure continuous reliable on-site oxygen generation at a significantly lower total cost per unit of oxygen. Furthermore, with the touch of a button, the user is able to choose the correct oxygen purity level for the application.

"With our OGP$^+$ Oxygen Generators, professional oxygen users can become oxygen producers," states Zandra van der Westhuizen, Business Line Manager at Atlas Copco Compressor Technique. "All that is required to switch from sourcing the gas from a vendor to producing oxygen on-site is a compressed air system plus a gas generator and the plug-and-play machine is ready to produce oxygen on-site."

The Atlas Copco OGP$^+$ generator is supplied standard with an oxygen sensor, a digital flow meter, a pressure regulator and an automatic start-up function. The machine features a new advanced controller with a large HD colour touchscreen that enables easy, user-friendly navigation through options such as oxygen purity selection and purity alerts. The automated 24/7 feed air and oxygen monitoring and interception function safeguards the quality of the OGP$^+$ generator's performance and output.

New distribution centre streamlines supply chain

BABCOCK Africa has established a new national parts distribution centre to enhance efficiency of its supply chain process across all the company's operations.

The streamlined central warehouse will stock spare parts and components for all of Babcock's business units and will facilitate the swift dispatch of items to all its national and regional branches.

Babcock delivers engineering support services to the energy, process, mining and construction industries, and is the exclusive regional distributor for many leading international brands.

The wholesale distribution centre is located at what was previously Babcock's construction equipment warehouse in Johannesburg, and is already in full operation under the experienced guidance of Hans Roos, Head of Supply Chain, Babcock Africa. He says that combining an integrated warehouse with a supply chain function is in line with the 'one Babcock' ethos that promotes collaboration within the group, and will enhance the business's operational capabilities and potential.

The warehouse currently holds parts and supports the logistical requirements for DAF Trucks and Babcock's full suite of construction equipment brands (Volvo Construction Equipment, Tadano, Sennebogen, SDLG and Winget). Plans are underway to incorporate Babcock's other business units into the national parts distribution centre.

Warehouse robotics to hit $9.7 billion by 2026

AS eCommerce continues to grow, the global warehouse robotics market size is expected to reach $9.1 billion by 2026, representing a 14% CAGR (Compound annual growth rate).

For 2021 the market is expected to reach $4.7 billion.

The growing demand for quick order supply to customers in an accurate and undamaged form, increasing competition in the e-commerce industry, and rapid rise in online shopping are the key factors expected to drive the growth of the warehouse robotics market for the e-commerce industry.

The automation solutions can deliver higher output and more accurate order fulfilment than a manual setup. They can increase customer satisfaction and improve margins by reducing the delivery time and cutting down the costs of wrong orders, the research notes.

Within the market, the transportation function is the fastest-growing function for the warehouse robotics market where the internal transportation of goods and products needs to be done efficiently and cost-effectively. Thus, warehouse operators are widely using robots for performing automated transportation of goods between different locations within a warehouse. Warehouse robot helps minimize the risk of accidents by reducing labour intervention, ensuring timely delivery of goods, and reducing inventory cost thereby increasing the productivity of warehouse operations.

Reprinted from MH&Lnews.com

As warehousing booms, BPO can help to meet demand

By Gean Botha, MD of PPO

AS traditional retailers have developed more robust online sales strategies and people have become more accepting of e-commerce in South Africa, we have seen significant growth in this space. This growth will only continue in the years to come, and the warehousing element of the logistics chain needs to support the shift. There has already been a significant expansion of industrial areas to offer greater warehousing facilities, especially close to airports and major transport routes.

However, the physical storage space of the warehouse is only one element. Managing the people element, especially given limitations on the number of staff permitted due to social distancing requirements, has become a real challenge. Furthermore, warehousing businesses face the challenge of sourcing trained and qualified staff due to occurrences of illness and isolation, brought on by Covid-19. Ensuring levels of output are met while balancing costs, requires an intelligent approach. This growth does, however, come with certain challenges, such as effectively managing warehouse storage space and human capital. The management of human resources is further exacerbated by making necessary considerations for Covid-19 regulations, such as social distancing.

Optimisation is the key

There is a physical limitation on the amount of work people can do, and increasing headcount is typically the first step in increasing output. For an increase or decrease in headcount to be effective, productivity and performance needs to be at a level of at least 95%. Therefore, improving productivity is the first step that any warehousing provider should take – and this includes training, process optimisation and warehouse capacity utilisation.

If warehouses are too small, and there is too much stock on hand, work areas will be congested. On the other hand, if there is not enough stock, then warehouses will not be able to fulfil orders. Both scenarios result in lost revenue. The key is to maximise volume over minimal time. Having a BPO (business process outsourcing) partner not only ensures that processes are streamlined, but also that staff are trained to the level required to be highly productive. On top of this, should additional resources be required, the BPO provider will assist by scaling their workforce up or down as demand necessitates.

Collaborative partnerships

To meet the drastic increase in volumes required today and, in the future, expansion needs to happen rapidly. Transparency and effective planning are critical – this is not a short-term fix, but a long-term view of where the industry is going and how it can be adapted. The more organised and well-run the warehousing provider, the greater their likelihood of survival, because agility to rapid market changes has become a hallmark of success. When BPO providers collaborate with warehousing and logistics suppliers and communicate effectively, the entire process can be strategically planned and executed for maximum mutual benefit.

Ensuring confidence with cloud-based WMS

Phil Lewis.

WHEN companies rely on a dated warehouse management system (WMS) to run distribution centers, it's not uncommon for the IT staff familiar with the system to move on. Unfortunately, this leaves the company without an in-house expert to manage issues as they arise. Added to this, if the original vendor is no longer supporting that version of the system, it can be incredibly difficult to get the system back up and running.

"Over time, each organisation builds the distribution ecosystem that uniquely addresses its needs. The challenge emerges when only a handful of people understand how to manage and maintain that system successfully and perhaps only one individual truly understands the complete picture," says Phil Lewis, Infor's VP of Solution Consulting EMEA. "With a mission critical WMS and corresponding data at the very core of the business, any scenario that puts it at risk can be detrimental to getting products out the door."

One of the ways to mitigate this risk is to accelerate cloud migration. By shifting the WMS to the cloud, organisations are supported by a comprehensive solution that is continuously updated. This guards against new trends forcing upgrades to the system down the road. "A trusted cloud partner should have a substantial investment in IT personnel that would be difficult for some of the largest organisations to match. A small army is dedicated to monitoring the organisation's WMS and its data to ensure both optimisation and protection," adds Lewis.

A recent CIO tech priorities survey by IDG showed that "despite increased budgets and interest in new technologies that can positively impact business in the future, organisations still face familiar challenges to adoption. The top challenges that IT leaders encounter are lack of sufficient budget (48%), lack of staff (46%), and lack of skill sets (42%)."

It's time to shift the responsibility of managing and maintaining the organisation's WMS over to a cloud provider with modern capabilities.

Aussie-invented battery technology - “missing piece of the renewable energy jigsaw”

In what could be an important breakthrough in South Africa’s transition to EV’s (electric vehicles), the technology described below seems to hold enormous promise.

Forgetting for a moment the two negative aspects of EV’s in SA – initial cost and how the government will ‘reclaim’ loss fuel revenues amounting to hundreds of billions of Rands, the role out of charging infrastructure particularly in rural areas and Eskom’s inability to provide a stable electricity supply, could be addressed in whole or in part by this Aussie breakthrough. Ed.


©ALDI SÜD

VSUN Energy has completed the first phase of a trial of battery technology that could deliver a truly green charging network for electric vehicles.

The trial involves the use of a small 5kW-30kWh Vanadium Redox Flow Battery (VRFB) powered by solar energy. The project opens the way for standalone EV charging stations anywhere in Australia or perhaps South Africa too.

VSUN Energy’s Business Development Manager Zamien Sumich said VRFBs were the “missing piece of the renewable energy jigsaw”.

They claim it can handle all the requirements of EV charging but can also be scaled up to suit a wide range of projects, from residential through to large grid-scale industrial and agricultural needs.

“The VRFB is well suited to the capture and storage of large quantities of renewable energy, enabling stable power output,” Mr Sumich said.

“Vanadium electrolyte doesn’t degrade, meaning that thousands of EV batteries can be charged from the one station.

“The VRFB’s long life, exceeding 20 years, makes it one of the most sustainable and long-lasting ways of storing renewable energy. At the end of the battery’s mechanical life, the vanadium electrolyte can be reused indefinitely.”

VRFBs can handle high temperatures without the risk of explosion.

Even the most remote EV charging point can be powered using renewable energy.

VSUN Energy, the renewable energy generation and storage subsidiary of Perth-based Australian Vanadium Limited, is collaborating with its Singaporean partner V-Flow Tech and EV specialists Gemtek on the project.

ASX-listed AVL is developing the Australian Vanadium Project south of Meekatharra. The Australian Vanadium Project is more than a vanadium mine, comprising a value chain spanning mining, manufacturing and downstream processing.

AVL Managing Director Vincent Algar said the initiative is part of the company’s strategy to further develop the market for the battery storage technology in Australia and elsewhere.

“The intent is for Australian Vanadium to not just sell vanadium into the metals sector internationally, but to be fully vertically integrated onshore here in Australia. In doing so, we are able to reduce the cost of these batteries while adding local value, content and job creation,” said Mr Algar.

“While we are still in the development phase of the mining project, we are building a vanadium electrolyte manufacturing facility near Kwinana, which is expected to be in production by mid-2022 with an annual production of 33MWh.

VSUN Energy has partnered with Electric Vehicle charging hardware and software provider Gemtek Goup for the trial.

Cummins invests in Sion Power to develop lithium metal technology

CUMMINS Inc. (NYSE: CMI) has entered into an agreement with Sion Power Corporation, a leading developer of high-energy rechargeable battery technology, to design and supply battery cells based on their proprietary lithium metal technology for commercial vehicle applications. In connection with the agreement, Cummins has made an investment in Sion Power. The investment provides Cummins a minority stake in Sion Power, allows Sion Power to further develop their lithium metal technology for the commercial vehicle market, and positions both companies for success in the future commercialization of the technology.

Under the agreement, Sion Power will engage in a multi-year development program to design and supply large-format lithium metal battery cells for use in Cummins battery packs. The batteries developed by Cummins will be integrated in its electric powertrains for commercial vehicles. “Our customers rely on Cummins to provide the most robust electric powertrains in the world,” said Amy Davis, Vice President at Cummins and President of the company’s New Power segment. “We need battery technologies that will meet the performance and cost expectations for tough, commercial vehicle duty cycles.” Sion Power’s high-energy battery chemistry is an important component of Cummins’ roadmap to electrify the company’s commercial vehicle products. Based on Sion Power’s proprietary lithium-metal anode technology and incorporating its patented manufacturing process, the cell provides a robust, long-lasting rechargeable battery for Cummins’ demanding applications. “Sion Power’s Licerion® is an enabling technology for Cummins’ future electric commercial vehicle offerings,” said Tracy Kelley, Chief Executive Officer at Sion Power. “Cummins is an ideal partner for Sion Power to enable this next generation of electric mobility and significantly support the decarbonisation of the transportation industry. Together this strategic relationship sets us on a path to deliver the future of batteries.”

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When absurdity becomes reality

OPINION

ON THE CONTRARY

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"WELL, well, well, and Ho Ho Ho to all you friendly people we have not seen over Christmas and New Year," beamed Luke the Dude, "belated wishes to you for a 2022 filled with love, smiles and success!"

Luke knows I report his words to you well-informed readers of Cape Business News who join us for some contrariness on the back page.

"And so say all of us!" added The Prof. "Last year is gone, with its good and its bad, here's to this year!"

"Useless!" exclaimed Jon the Joker, "what was good about last year?"

"Eh, Boyo!" challenged Colin the Golfer. "You watch rugby, don't you? If you care to look at the scoreboards of our international games – Bokke and especially the Blitzboks – we had a spankingly good year, Covid or Not."

"Hear! Hear!" saluted Big Ben, with enough volume to render Jon's protest inaudible. "And also: Referees or not! It piddles me off (that's not how he said it) to see them ignoring our captain while respecting rival captains like heroes. Which most of them are, of course, they AND Siya Kolisi!"

The cheer from behind the assembled beer glasses clinched the argument. Coach Rassie also got a "Viva!" all round.

"Bring on the new season!" invited Luke the Dude, "anything else you are looking forward to? Prof?"

"Well, seeing that you ask," deemed The Prof after getting an adequate response from his pipe, "I am rather looking forward to reading my esteemed colleague David Benatar's book on the Fall of the University of Cape Town. He is one of the few adults in the room to have shown a backbone during that painful disaster. Is UCT still respected as the top African university in the world? Some would disagree."

"Only racists would," stirred Bill the Beard, who is not as uneducated as he sometimes pretends. "Old whites being taught a lesson by young blacks, that's what happened there. And driving that capitalist imperialist Rhodes off the campus …"

"While," interrupted Stevie the Poet, "seeing they were at it, burning and destroying a part of it, in-between assaulting, threatening and intimidating peaceful, defenceless people – female, male, white certainly, but also black. Remember Professor Bongani Mayosi, the black academic who was finally driven to suicide by the mindless horde?"

"So," Stevie addressed the provocateur, "what does 'racist' mean to you, Bill?"

"Same as it means to everybody," sneered The Beard.

"That's where you are mistaken, my learned friend," advocated Stevie the Poet, "as demonstrated in the Fallist invasion. I'll explain with assistance from a Politicsweb article by Dr James Myburgh – which actually features David Benatar in his real job as philosophy professor. Lead actress: a Fallist student in his Ethics class.

"University regulations require students to attend a minimum number of lectures in a course to write the exam. This student did not comply, despite being warned and accommodated along the way. And when the inevitable happened, she lied and slandered: She claimed to have doctor's sick notes for nine absences, when the number was in fact three. She had walked into a lecture, signed the register and left immediately – to claim fraudulently that she attended.

"She waged a relentless social-media bombardment of fake accusations and lies against Benatar. Her duly agitated readers joined in, turning the harassment into full-scale character assassination."

"No doubt she was telling the world that he was a racist," ventured Miss Lily, "standard defence for exposed wrongdoers, as André de Ruyter found out when he suspended such a person at Eskom."

"Correct: The race card first and foremost and throughout," confirmed Stevie. "Of course this was scandalously false and Benatar was deeply offended."

"So what about 'racist' having different meanings?" reminded Bill the Beard.

"Getting to it, William, getting to it. Later, the student said she knew Benatar believed in equal treatment for all people. But – and here we are, Bill – she claims it is wrong to treat all students as equal, because black and white students are not equal. Benatar had failed to treat her differently."

"In other words," pondered Miss Lily, "equal treatment for black and white students is racist?"

"Absurd as it is, that is her argument," nodded Stevie. "Wait, let me find the quote on my very smart phone …"

The barman saw the gap and replenishments were confirmed and provided while The Prof found a match.

"Right, here we are," resumed Stevie after a sip. "She describes institutionalised racism thus: '… where a system works to discredit people of a certain race in ways that are not necessarily explicit.'

"Followed by: 'So expecting black students and white students to perform the same. As if we don't know the majority of our black students come from township schools, where they weren't well-equipped. Or discrediting an affirmative action approach in how we allow students to come into the university. And expecting people to be equal in a country where there are very deep inequalities. And unfortunately, people can't perform at an equal level.'

"See my point?" Stevie raised his eyebrows. "To this person, to her fellow-Fallists and who knows to how many others, equality is racist. Criticising affirmative action because the SA version discriminates on skin colour, is racist. Blocking top white students from entering a university because of their skin colour is not racist – instead, it is racist to expect all students to meet the same entry requirements. You must discriminate against the white candidates. If you don't, you are racist.

"It is also racist, according to this dogma, to expect people in jobs to perform at the level of their pay grades. 'People can't perform at an equal level,' the Fallist Fighter says. That means, appoint people on skin colour and pay them regardless of performance."

Stevie the Poet sat down and downed his glass: "The ominous reality is, she was only verbalising ANC dogma. Add in corruption and theft, and you have the roots and branches of collapse at Eskom, Transnet, SAA, the Post Office, ANC-run municipalities and provinces – all dragging South Africa down into the pit of failed states. Think about it."

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Employee sentiment research in SA shows that COVID-19 has led to dramatic shifts in the workplace

Over half (53%) of South African employees claim that they will be likely to look for a new employer in the next 12 months

WORKDAY, a provider of enterprise cloud applications for finance and human resources, commissioned Yonder Consulting to conduct research earlier in 2021 to understand employee sentiment across Europe and South Africa during COVID-19.

South Africa was the first country outside of Europe to conduct this research. Yonder undertook 17,054 online surveys in total, across nine European countries and South Africa (1031) amongst employees below Director level. The respondents work at organisations with more than 250 employees.

The research shows that while workplaces have seen major economic, social, environmental, and technological changes recently, the pandemic accelerated trends including remote working, shifting employees' expectations, learning and development, purpose and belonging at work, and employee wellbeing. In South Africa, Yonder found that:

- 80% of employees worked from home, but 96% experienced connectivity issues
- Leaders viewed as honest, trustworthy, caring, supportive, approachable, inspiring and competent are perceived to have performed better
- 53% of employees struggled to motivate themselves
- 58% believe their leaders are not prioritising health and wellbeing

The shift to working from home

In South Africa an average of 80% of employees reported working from home (higher than the European and UK average of 61% and 71% respectively). Encouragingly, many employees feel their organisations reacted well to fundamental changes in working. Most employees working from home (72%) reported solid morale (as compared to the European standard of 56%), and said their productivity increased working from home.

Nearly two thirds of employees (63%) reported connectivity issues either all the time, regularly or occasionally, while a further 33% said they experienced issues but only rarely.

Employee morale and motivation levels

Compared to Europe (46%), a higher percentage of South African employees (53%) found it difficult to motivate themselves. The top motivational struggles mentioned are pay rises and bonuses being cancelled or delayed, and employees assuming different roles or additional responsibilities.

Concerningly, 51% of organisations made redundancies since the pandemic started, and this figure rises to two thirds in the Retail, Food, Beverages and Restaurants sector. 63% of employees believe they lost opportunities to develop their career.

Evaluating leadership performance

Employees generally had positive perceptions towards their leadership and a majority felt their organisations leaders navigated the last year well.

Employees in South Africa are significantly more likely to feel their senior managers demonstrated clear vision, managed resources and understood their role in supporting the organisation compared to the European average.

Role changes and future motivations

Over half (53%) of South African employees claim that they will be likely to look for a new employer in the next 12 months. This is significantly higher than the European average of 25%.

Forty-six percent of employees said they would switch careers for better training and development. This was followed by the need to seek better pay (39%), a more senior role (36%), career change (35%) or a more interesting role (34%). Half of employees in South Africa feel trapped in their current job due to economic uncertainty, though a similar proportion feel they will get a pay rise in the next 12 months.

Looking ahead

The pandemic and economic downturn have elevated the role of the CHRO to help CEOs manage employees during a time of crisis and chart a course for the future.

Kiveshen Moodley, Country Manager South Africa, Workday, says that the last year has dramatically accelerated the urgency and importance of organisations embracing development in five key areas:

• Inclusion and Belonging - Organisations investing in diversity, inclusion, belonging, and equity are reaping substantial bottom-line benefits and outperforming competitors

• Digital Acceleration - Digital transformation takes centre stage and is the top priority for business leaders. Employee support and services will need to be delivered virtually and digitally

• Enabling Experiences - Creating compelling employee experiences that connect, support, empower, inspire and engage workers in the new, more flexible workplace

• Agile Organisation - Automating and augmenting work to enhance, elevate, and extend employees' expertise, enabling leaders to effectively manage, mitigate, minimise disruption and redirect resources

• Skills Imperative – Building critical skills and competencies for the organisation "The perfect storm of cultural upheaval, employee stress, business challenges, and opportunity has created a critical moment for businesses, and if they don't meet it, they risk alienating employees, falling behind technologically, and missing opportunities to retain, engage and develop their workforce."