

CAPE Business News

FOUNDED 1980

National Distribution

SEPTEMBER 2022



SAISI report castigates DTIC

Steel industry all but 'destroyed'.



Fire season approaches

Mandoval Vermiculite can reduce the carnage.



Plastics are not the boogeyman.

Littering and bad planning is - Plastics SA.



MetPac-SA cautions on DTIC plans to restrict and regulate metal waste

"Metal products that are clearly not stolen or illegally traded infrastructure products, should be excluded from the export ban in order to protect the local collection and recycling industry."



Kishan Singh.

METPAC-SA, the Producer Responsibility Organisation (PRO) that represents the interests of the local metal packaging recycling industry in South Africa, has responded to Government's recently announced plans to regulate and restrict the trade of scrap metal (ferrous and non-ferrous metals waste and scrap) in an effort to limit damage to infrastructure and the economy.

These draft policy changes announced by the Department of Trade, Industry and Competition (DTIC) are a direct outcome of President Ramaphosa's 2022 State of the Nation Address, during which he promised to tackle growing instances of criminality in the scrap metal value chain – particularly with copper theft and other metals stolen from public infrastructure.

According to Kishan Singh, CEO of MetPac-SA, the industry supports taking such a proactive approach and commends the DTIC on the engagement of external resources as well as the quantitative studies that resulted in the draft policy proposals.

"We are concerned, however, that this well intentioned and necessary intervention may have some unintended consequences in the collection and recycling environment," he said. As an industry body that represents roughly 80 % (by tonnage) of the metal packaging value chain in South Africa,

MetPac-SA feels they are able to offer the policy makers a unique vantage point of the country's overall metal recycling scenario.

In a formal response submitted to Mahendra Shunmoogam, Director-General of the Department of Trade, Industry and Competition, MetPac-SA argued that South Africa recycles approximately 3.5 million tonnes of metal each year. Of this, the vast majority (>95%) of metal is not stolen infrastructure metal. Secondly, although the country has a very active and burgeoning metal recycling industry, it is driven by a fine sense of balance of local demand and export tonnage. Moreover, there are still several recovered metal products for which there is no local market. This includes stainless steel, zinc scrap, certain aluminium products, exotic tungsten, titanium, moly, nickel etc.

"We believe a more practical solution would be for Government to focus export restrictions exclusively on the identified, target metal items such as copper scrap (including cable and wire); semi-finished copper products (ingot, blister, anode, cathode or granules) and railway scrap. Metal products that are clearly not stolen or illegally traded infrastructure products, such as Used Beverage Cans (UBC's), should be excluded. The collection and recovery of these items help support a circular econ-

omy driven by the honest and hard work of waste reclaimers and recyclers that help to divert waste from landfill and reduces the consumption of natural resources," Kishan says.

In South Africa, UBC's are collected by a healthy functioning metal recycling sector. Should the blanket ban on export restrictions be implemented, MetPac-SA fears that this industry could adversely be affected.

"At present the combination of both a strong local and international demand for UBC's make them one of the most valuable packaging materials currently in South Africa, with more than 70 % collected and recycled. It is therefore an extremely important contributor to the informal collection economy. Our concern is that preventing the export of UBC's would create an oversupply locally. In the absence of creating more local demand, the local price for these products would drop significantly - thereby undermining local collection and marginalizing an estimated 30 000 informal waste pickers in SA. For this reason, we are urging Government to keep the doors open and to allow our industry to continue exporting its excess," Kishan concludes.

For more information, visit www.metpacsa.org.za

Scania partners with The Shoprite Group to launch first fuel-efficient Euro 5 trucks



SUSTAINABLE transport solutions that drive customer profitability are the driving force behind Scania Southern Africa's partnership with The Shoprite Group which has acquired over 100 of Scania's New Generation trucks powered by Euro 5 engines. "At Scania Southern Africa, we are leading the shift to sustainable transport solutions. Our Euro 5 advanced engine platform offers customers like The Shoprite Group proven 10% fuel savings coupled with lower CO2 and NOx emissions," says Erik Bergvall, Managing Director, Scania Southern Africa.

The partnership with The Shoprite Group has been a 5-year journey. "At face value, we are two very different companies, operating in two very different industries but we share a commitment to driving sustainability across our business ecosystems," explains Bergvall.

Extensive demonstrations and road testing were conducted on the Euro 5 vehicles before the handover with a 10% fuel saving recorded across most applications. The impressive data from these tests lead to Shoprite's final decision to purchase the Euro 5 G450 A6X4 tractors.

"Euro 5 compliance was a non-negotiable for Shoprite. We are happy that we could prove that our Euro 5 vehicles are an economically viable solution for them, delivering unparalleled fuel efficiencies and better aerodynamics," says Bergvall.

Continued on P24



fastenright

Your Stainless Steel Bolt and Nut Experts

We stock A4-80 High Tensile Stainless Steel Fasteners!

CONTACT US
t: 021 534 9095
f: 021 534 5997
sales@fastenright.co.za
www.fastenright.co.za

VISIT US
27 Mail Street
Western Province Park
Epping



best service | competitive price | high stock availability

A4-80 High Tensile Stainless Steel

IN THIS ISSUE

- 11 Building / Construction / Infrastructure & Development
- 13 Petrochemicals Oil & Gas, Upstream & Downstream Value Chain
- 16 Surface Mining: Quarries & Minerals
- 19 Corrosion / Protective Coatings / Abrasion Control
- 21 Heavy Plant & Machinery Equipment
- 23 Sustainability / Carbon Emission Reduction / Natural Resources
- 26 Metal & Paper Recycling / Waste Management
- 27 Recycling & Waste Management - Zero Waste to Landfill
- 29 Plastics / Packaging Materials / EPR & PRO
- 30 Fishing: Aquaculture / Fish Processing & Handling
- 31 Skills Development: Training in the Workplace
- 34 On the Contrary

Cummins begins testing of hydrogen fuelled IC engine

CUMMINS Inc. has begun testing a hydrogen-fuelled internal combustion engine. “The potential of the hydrogen engine is to reduce emissions and provide power and performance for customers,” said Srikanth Padmanabhan, President of the Engine Segment. “We are using all new engine platforms equipped with the latest technologies to improve power density, reduce friction and improve thermal efficiency, allowing us to avoid the typical performance limitations and efficiency compromises associated with converting diesel or natural gas engines over to hydro-

gen fuel. We have made significant technological advancements and will continue moving forward.” Following the proof-of-concept testing, the company plans to evaluate the engine in a variety of on- and off-highway applications, supporting the company’s efforts to accelerate the decarbonisation of commercial vehicles. “The hydrogen engine programme can potentially expand the technology options available to achieve a more sustainable transport sector, complementing our capabilities in hydrogen fuel cell, battery elec-

tric and renewable natural gas powertrains,” said Jonathon White, Vice-President of Engine Business Engineering. Hydrogen engines offer OEMs and end-users the benefit of adaptability by continuing to use familiar mechanical drivelines with vehicle and equipment integration mirroring that of current powertrains while continuing to provide the power and capability for meeting application needs. The hydrogen engines can use green hydrogen fuel, produced by Cummins-manufactured electrolyzers, emit-

ting near zero CO2 emissions through the tailpipe and near zero levels of NOx. The projected investment in renewable hydrogen production globally will provide a growing opportunity for the deployment of hydrogen-powered fleets utilizing either Cummins fuel cell or engine power. **Integrating hydrogen technology** The high energy density of hydrogen enables easily integrated on-board gas storage without compromising either the vehicle payload or operating range. Cummins’ joint

venture partnership with hydrogen storage specialist NPROXX allows the integration of the fuel cell or hydrogen engine with the high-pressure gas cylinder tanks and supply lines on the vehicle. NPROXX is also a leading supplier of containerized storage vessels, enabling fast hydrogen refuelling for end users. Cummins has more than 600 electrolyser installations across the globe. The modular scalability of its electrolyzers makes it ideal for a range of applications, from the localized supply of truck and bus fleets to utility-scale electrolysis.

Impower to supply Capitec with cutting-edge solar power system

CAPITEC, has commissioned EPC solar installation company, Impower, to design, install, and maintain a solar power solution that integrates both solar and an innovative battery backup system. The design specification to be installed by Impower includes:

- 715kWp design, merging ballasted and roof mounting structures.
- The integration of not only a 500/400kWh bat-

tery, but the onsite generator as well as the facility’s building management system.

- An expected yield of 1 154 887kWh in the first year after commissioning and 21 563 939kWh over a 20-year period.

Battery system allows peak lopping

Impower will supply Capitec with an advanced battery backup system that ultimately

reduces peak energy costs. While conventional battery backup systems typically remain idle until a power outage occurs, this innovative design performs peak-shaving. Capitec will be able to consume energy within peak times whilst simultaneously trimming costs. Further, such designs can be integrated with diesel generators to provide another layer of energy reliability and reduce operational

spend on diesel. Technology advances have lowered the pay-back time from 7,5 years (2 years ago) to approximately 3 years today. **Public-private collaboration** Any system greater than 350kW must undergo a grid integration study, which is a systematic framework used to assess a power system with high penetration levels of variable renewable energy

(RE). At 715kW, this project was deemed a candidate for the study and thanks to the timeous and efficient receipt of all the required information from the Stellenbosch Municipality, Capitec’s evaluation was seamlessly and successfully conducted. By increasing their dependence on solar as an energy source, this solar project will result in minimising 22 211 tons of CO2 over the lifetime of the project.

CAPE Business News
Where industry speaks to industry

DIGITAL SUBSCRIPTION COMPETITION

Subscribe and receive 10% MARKETING DISCOUNT from your next digital marketing campaign with Cape Business News

To qualify for entry to the competition:

1 Subscribe + download our publication

2 Subscribe to CBN's daily E Newsletter

3 Follow us on   

www.cbn.co.za



Need a Storage Solution?

Dexion offers efficient, cost effective solutions of all your storage requirements. Dexion racking is designed and manufactured in compliance with the S.E.M.A code of practice, providing you with a quality, fully adjustable storage solution.

- » Rack inspections, rack maintenance and certification
- » Static Racking
- » Cantilever Racking
- » Shelving
- » Mezzanine Floors
- » Conveyors
- » Mobile Racking
- » Mobile Archive Shelving
- » Small Parts Storage & Bins
- » Staff Lockers

DEXION
Smarter thinking.

Cell 083 264 6043 Email ron@dexioncape.co.za
Tel 021 552 0220 Fax mail 086 517 2949

Southern Storage Solutions (Pty) Ltd
t/a Dexion Storage Solutions
Unit 22 • Frazzitta Business Park cnr Koeberg & Freedom Way • Milnerton • Cape Town • 7441

www.dexionrackingandshelving.co.za



Eskom and SARETEC collaborate

ESKOM and the South African Renewable Energy Technology Centre (SARETEC) have signed a Memorandum of Agreement (MOA) to formalise the collaboration to develop renewable energy artisan skills in South Africa, to support the implementation of the Eskom Just Energy Transition (JET) Strategy. Eskom has developed a comprehensive JET Strategy which places equal importance on the ‘transition to lower carbon technologies,’ and the ability to do so in a manner that is ‘just’. In support of this strategy, Eskom has a pipeline of clean energy projects at various stages of development and recognises that there is a dire lack of skills along the value chain. As an initiative of the Department of Higher Education and Training through the National Skills Fund, SARETEC

was established as the first national renewable energy technology centre and is managed by the Cape Peninsula University of Technology. SARETEC expedites specialised industry-related and accredited training for the entire renewable energy (RE) industry including short courses and workshops. SARETEC has, since its inception, established itself not only as a renewable energy subject matter expert but significantly contributed to the national skills pool of artisans and technicians with a special focus on wind and solar. SARETEC will support Eskom for the next 36 months to establish a similar renewable energy Training Facility fit for purpose to train artisans and technicians at Eskom’s Komati Power Station. The Facility will be managed by Eskom’s Academy of Learning (EAL).

The respective renewable energy industry associations namely, the South African Wind Energy Association (SAWEA) and the South African Solar Photovoltaic Industry Association (SAPVIA) are an integral part of the South African renewable energy industry as they promote innovation and cohesion amongst all the role players and stakeholders. Most importantly, both Eskom and SARETEC as members of these associations continue to draw ongoing support which is well demonstrated on this project. The objective is to educate, reskill, and upskill Eskom Komati Power Station staff and qualifying beneficiaries from the surrounding communities in the Mpumalanga region. This is in line with Eskom’s Just Energy Transition drive and SARETEC’s vision

to ensure a pipeline of local skills responding to economic needs and readiness for the inevitable transition. Given the accelerated global movement towards investment in a clean energy transition, there is a need in South Africa to upskill, retrain and develop a workforce to take full advantage of the opportunities presented by this transition. Moreover, the risk of job losses and redundancy due to the transition presents an opportunity to provide training and upskilling for new industries that can be scaled up as a result of the transition, particularly the renewables industry. Eskom and SARETEC are committed to continue to partner with key stakeholders to ensure that the JET goals are met in an inclusive and collaborative manner drawing on the skills of all key role players.

“Misguided protectionism has all but destroyed our local steel industry”

THE recent publication of the first Steel Report by the South African Iron and Steel Institute (SAISI) confirms what Duferco has been arguing for months: the government’s attempts to use tariffs to protect the local steel industry in the person of ArcelorMittal South Africa (AMSA) have backfired spectacularly. As a result of this flawed approach, argues Duferco CEO Ludovico Sanges, government has effectively gutted the country’s ability to produce its own steel — at a huge cost in jobs.

“The ostensible aim of the tariffs was to protect our primary steel producer, AMSA, from cheaper steel largely produced in China. Despite the extensive tariff protection provided, AMSA has actually reduced its capacity and has proved unable to meet the demands of downstream players such as Duferco. As the report makes clear, this now means that South Africa is no longer able to produce enough steel for its own needs

and has thus lost its status as a steel exporter,” Sanges says.

When the protective tariffs were gazetted, several conditions were imposed on AMSA. Of these, one bound AMSA not to adjust the current pricing model of the steel offered to domestic re-rollers, and another to preserve jobs and not close any plants. Neither of these conditions has been met.

Despite agreeing to preserve jobs and not close any of its plants, AMSA went ahead and closed down its most modern plant, Saldanha Steel, in 2020. Duferco South Africa was created as a joint venture between Duferco and the Industrial Development Corporation to benefit the steel produced by Saldanha Steel. Since closing Saldanha Steel, AMSA has not been able to supply steel needed by the country reliably at the correct quality via its outdated Vanderbijlpark facility.

For example, in 2017, a three-year supply agreement between AMSA and Duferco commenced, but dur-

ing the term of the contract, AMSA proved to be unable to meet its contractual obligations in terms of on-time delivery.

Re-rollers, like Duferco, have essentially been forced to exit the local market because they cannot access the raw product (hot-rolled coil) they need from AMSA, and tariffs on imported product make rerolled product uncompetitive on the local market.

“Using imported hot-rolled coil we are ironically able to compete successfully on international markets since the local tariff does not apply,” he adds. “Our local reroller industry is competitive and could also supply the local market if only we could obtain the hot-rolled coil we need reliably, at the right price—but with the tariff protection in place, that’s not possible, to the detriment of the South African economy as a whole.”

Duferco has repeatedly approached the authorities to have the tariff protection afforded to AMSA



Credit: American Iron & Steel Institute.

reversed for re-rollers given the adverse effect it was having on the local steel industry due to lack of competition, but to no avail. However, as the new Steel Report shows, the consequence of the government’s unwillingness to look beyond AMSA to the interests of the whole steel industry has now been revealed.

One of the Report’s key findings is that despite South African steel demand rising

by an “astonishing” 36% after the end of the COVID-19 lockdown, much of this demand had to be met by importing steel. In fact, from having been a net exporter of steel, at the beginning of 2020, South Africa became an importer of steel. Even worse, because our local rerollers do not qualify for a rebate, the price of the finished goods has grown dramatically—this in turn has led the downstream

industry to turn to overseas producers.

“In other words, despite our surplus steelmaking capacity—for example, the mothballed Saldanha Steel plant—South Africa had to import one-third of our steel needs last year. This is truly shocking,” Sanges says. “If the government’s much-heralded infrastructure spend materialises, for which huge amounts of steel will be needed, that deficit will only rise.

We have truly thrown the baby out with the bathwater.

“I can only hope that Minister Patel and his colleagues will read this report carefully and take its lessons to heart. We need a competitive steel industry to fuel growth and job creation, and protecting an inefficient supplier like AMSA is not the way to get it. In fact, misguided protectionism has all but destroyed our local steel industry.”

PoCT opens ITSA to improve traffic flows

THE Interim Truck Staging Area (ITSA) located alongside Duncan Road – the main road in the Port of Cape Town – is gaining momentum since the first phase was open to traffic in July 2022.

With Phase 1 designed to manage the flow of heavy vehicle traffic on the roads leading to the Cape Town Multipurpose Terminal (CTMPT), the ITSA has proven to significantly reduce traffic in the CTMPT Precinct. Phase 2 will be operational in mid-September 2022 and is designed to alleviate truck congestion at the Cape Town Container Terminal (CTCT).

The ITSA has the capacity to stage 28 trucks in Phase 1 and 37 trucks in Phase 2. This solution stems from an Eight Point Plan that was co-created

by various representatives from the maritime logistics value chain to improve efficiencies in the Port of Cape Town, with the improvement of truck operations as one of the priorities.

Truck operations will also be improved by activating night runs, to encourage port users to utilise the latent capacity available at night that would reduce congestion during the day, and the activation of biometric scanning for truckers at all port entrances.

“We are encouraged by the benefits that are being enjoyed by the multipurpose precinct users through Phase 1 of the project. The facility is intended to serve as an “overflow” waiting area in instances where the operational terminals have reached full capacity and can no longer allow the

entry of trucks. With the first phase the port is already seeing the diversion of idle trucks off Duncan Road, thus increasing road safety and allowing for all port users to enjoy free traffic flow,” said ITSA Project Manager, Roxanne Smith.

The ITSA addresses the immediate truck congestion whilst the Ports Authority pursues the possibility of a permanent truck staging facility in the Port Industrial Park. The permanent truck staging facility, which forms part of the CTCT Phase 2B Project is scheduled for completion in the 2024/25 financial year. This will substantially improve the flow of trucks in and out of the port and address the increase in the traffic of heavy vehicles in recent years.



Future proof your fire protection system with **FireDos®**

Speak to the company that knows foam systems best

Efficient • Effective • Easy to use & test

FireDos foam dosing proportioners and skids • Monitors and water cannons • Mobile dosing and monitor trailers • Bund, tank top and rim pourers



dosetech fire 30
special risk fire protection

+27 (0) 861 111 544 • Mike – mgf@dosetech.co.za
firedos@dosetech.co.za • www.dosetech.co.za

ALL INDUSTRIAL, MOBILE, SPRINKLER REQUIREMENTS

Looking for and finding process data

Transparent data exchange between manufacturers and users is an almost limitless topic, also in the process industry. To make progress in this area, many individual solutions, including some proprietary ones, have to be brought together under one roof. The Digital Data Chain Consortium, with VEGA as a founding member, wants to make documents and data accessible to all by means of a digital type label.

WHAT looks like a complete system out on the factory floor rarely turns out to be a unified whole when viewed up close: In every production system there are mechanical, electrical, electronic and software components from many different manufacturers. A complex multiplicity that makes itself felt particularly when things are not running smoothly. For example when a sensor needs to be re-parameterised, a valve sealed or a fuse replaced. How efficiently a machine or even an entire system can be repaired or serviced depends largely on how quickly the necessary data is available. Do the relevant documents first have to be laboriously searched for in a folder buried under stacks of papers, is the manual locked

away in a dusty cabinet somewhere, or is there a PC database where information on the component in question is stored – hopefully up-to-date – and readily retrievable?

Unambiguous and immediate

According to the Digital Data Chain Consortium, a data solution that promises greater productivity looks quite different. The consortium's goal is to make all system components clearly identifiable. "It's all about having secure and accessible data in the cloud instead of in individual databases", says Florian Burgert, product manager at VEGA, summing up the urgent task. In his opinion, significant savings

are possible if this is realised. "The situation today," explains Burgert, "is that companies often have to integrate legacy data into existing applications. Searching for and collecting data can be time-consuming, as it may be scattered around the country or even around the world, or stored on the computers of different manufacturers."

One goal, all companies

As a manufacturer of level and pressure instrumentation and founding member of the consortium (or DDCC for short), VEGA developed the new "DIN SPEC 91406" standard together with well-known process automation companies. The

aim of the proposed standards is to make equipment management easier by using distinct and unambiguous digital type labels. Users should benefit just as much as manufacturers, who can thus perform faster updates with far less printed material. The new labelling, which is only recognisable as a QR code on the housing of the device, has everything needed: namely all manufacturer information relating to the product. When required, the data can be called up with any mobile device at any time. In practical terms, traceability thus extends from production to ordering and delivery, and from installation to the end of the service life of the device. The traditional barriers between man-

ufacturers, i.e. time, place, format and the type of device used to retrieve the data, are thus overcome. All data can flow freely between the partners involved in the supply chain. If the consortium has its way, the traditional nameplate will soon be done away with. After the changeover, every employee in a company will have the same up-to-date information at their disposal at all times and thus be able to make correct, well-founded decisions. This method of data access includes other options: for example, order management can be optimised, and the stocking of spare parts better planned. And last but not least, the required compliance documents would always be available in good time.

Understanding alternative power sources



Gregor Kuepper.

be served by either a hybrid (meaning PV and battery) inverter or separate battery and PV inverter. Your batteries act as backup power when the grid has failed e.g. load-shedding or a power outage. During a normal day, PV can provide power in a house and charge these batteries. This stored power can then be used during the night."

ACCORDING to Gregor Kuepper, Managing Director of SOLARWORLD Africa, there has been a marked uptake in renewable energy solutions following the recent bout of stage 6 loadshedding. "Solar used to be only a solution for large scale businesses or those with adequate space to house enough panels to support electricity consumption. Fortunately, homes and small businesses now have several options available to either provide temporary support when there is a power cut, and potentially, long term relief as the preferred ongoing power source."

2.2 Battery Backup
This is purely a backup solution and usually sized to make sure that your essential loads are up and running during loadshedding/power failure. Under the banner of pure battery backup, you also have various options. Such as a UPS, battery together with a charge controller and then of course battery and battery inverter. Of these, a battery with a good and reliable battery inverter is the most reliable solution.

2.3 Battery and hybrid inverter

This is the same as the battery and battery inverter option except consumer have an opportunity to install PV panels at a later stage and do not have to add the extra cost of a PV inverter, as it would be PV-ready.

Kuepper explains the different solutions:

Solution 1 – Grid-tied Photovoltaic (PV) system

A solar photovoltaic system, (PV system) comprises two main components - PV panels (DC power) and a grid-tied PV inverter (DC to AC). What is meant by "grid-tied"? The inverter synchronizes the frequency and the output voltage to its connected grid. If solar energy is insufficient, a grid-tied PV inverter switches and starts drawing power from the grid into your home. It ensures there is a seamless power supply.

"This option saves electricity in the long run, no backup required. The pure PV inverters are grid-tied, this means they require the grid to switch on and convert the direct current (PV) into alternating current power which is required by appliances in your home."

Solution 2 - On-Grid with Backup

2.1 PV and Battery backup

"When it comes to PV and battery, this can

Solution 3 - Off-grid

You would require a large enough PV array to serve your daily loads and charge the batteries for use at night. And in turn, a large enough battery bank to serve the loads during the evenings and possibly during daytime, when there is not enough PV generation. There is of course the option to add a generator or to use the grid as backup.

Kuepper advises that a tailored approach will see various renewable energy solutions and products being recommended and made available. "Consult the experts, weigh up the options and also find a solution that not only meets your electricity consumption needs, but that is also financially viable - and always consider the long term benefits as certain products are designed to go the extra mile."

For more information visit: www.solarworld.co.za

RADAR IS THE BETTER ULTRASONIC



80 GHz level sensor with fixed cable connection (IP68)

All advantages of the radar technology:
www.vega.com/vegapuls

RGM acquisition brings Surelift into the product stable

THROUGH its acquisition of HoistHub, RGM Cranes will once again be the sole distributor for the Surelift brand in South Africa. RGM Cranes Managing Director, Alex Dowling, explains: "HoistHub was created to cement the relationship between mid-level service providers and importers. This has been rapidly achieved and well received by the market and our intention is to undertake continual development of the full product offering from RGM Cranes."

"Service providers can lean on our hundreds of years of collective experience..."

This acquisition further concentrates the influence that overhead crane specialist RGM Cranes exerts on both the South African and sub-Saharan Africa materials handling landscape. "Surelift and HoistHub have done a sterling job in connecting service providers with products and in building relationships. The natural progression of that is to broaden the offering available to these service providers and make the full package available to them," adds Dowling.

In the face of the economic downturn experienced since the onset of the recent pandemic, RGM Cranes has continued to expand its base of operation by recruiting new staff to ensure a seamless customer experience. The addition of HoistHub and Surelift helps enhance the company's intent to create a sustainable and stable platform for materials handling customers in the region.

"Economic pressures are having a far stronger influence than ever before on decisionmakers as far as capital expenditure goes", Dowling explains.

In addition to the benefits accruing from the addition of HoistHub and Surelift to the RGM Cranes offering, Planeta Hebeatechnik South Africa continues to drive the customer-centric vision of RGM. Cranes. Planeta was established in 1861 in Germany and has been involved in the lifting sector for 122 years, as a strong and reliable brand.

"The company's

PITCH electric hoist brand has been identified as an industry-leading product, and through consultation with clients we quickly realised that there is an immediate and urgent need to provide the high-quality manual equipment

which Planeta Germany is synonymous with. We are encouraged by the early adoption of these products by our clients and believe that this is indicative of our establishment as a key player in the manual products segment of the industry," says Dowling.

"Service providers can lean on our hundreds of years of collective experience within the lifting and materials handling industry to provide unparalleled solutions and products to their customers. With our

comprehensive offering we are able to customise a solution for every need. We invite the market to engage with our technical team to discuss how we can help them maximise their productivity and business potential," says Dowling.



Alex Dowling.

SAFEHOUSE™
Suppliers you can trust

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



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

PROUD MEMBERS OF THE SAFEHOUSE ASSOCIATION

ABERDARE
A MEMBER OF HENDYSON GROUP

Crabtree

APEX
A MEMBER OF HENDYSON GROUP

Voltex
your electrical experts

M.E.S
www.mesproducts.co.za

ARB
Electrical Wholesalers

CEP
Cable & Electrical Products

eurolux
Lighting your way

HellermannTyton

Build it

THREE D
AGENCIES
THE CABLE ACCESSORY COMPANY

LESCO
MANUFACTURING (PTY) LTD

ELECTRIX

WACO
Waco Electrical Supplies

SWAN
ELECTRIC

ECA

Stone-Stamcor
Lighting, Power & Data Products

ABB

SW
PRODUCTS
LOCAL REPRESENTATIVE FOR AFRICA

LivingBrands

GENTECH

REGENT
LIGHTING
SOLUTIONS

THE LIGHTING
WAREHOUSE
LIGHTING SOLUTIONS

ACDC
EXPRESS
ALBERTON

Lumax
LIGHTING

Shuttle

ZEBBIES
Love Lighting

LEDVANCE

PIOLED LIGHTING

D4

ARS
LIQUID TRANSFER

AXFLOW
Fluids Handling

MILNEX 587

Switch Technique
"The Team To Rely On"

BEKA Schröder

FLASH

amun OSRAM

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

EEA Bill – scorecard explained

ACCORDING to David Morobe, Executive General Manager for Impact Investing at Business Partners Limited, impending changes to B-BBEE legislation are contained in the Employment Equity Amendment Bill, set to conclude in September 2022. It is key for business owners to familiarise themselves with the five B-BBEE basics.

Does your SME qualify for B-BBEE scorecard completion?

“There are currently two categories within which the majority of South African SMEs fall in terms of B-BBEE,” explains Morobe. The first is exempted micro-enterprises (EMEs), which have an annual turnover of less than R10 million – these

businesses are not currently audited in terms of their B-BBEE status. The second is qualifying small enterprises (QSEs), which are businesses with an annual turnover of between R10 million and R50 million.

How a BEE scorecard works

“QFEs are evaluated according to five

B-BBEE codes,” elaborates Morobe. “These are ownership, skills development, management control, enterprise and supplier development, and socioeconomic development. Each of these are equally weighted at 25 points, resulting in a score out of 100 points.”

- The ownership

score measures the percentage of the SME that is owned by black individuals and is evaluated as at the date of B-BBEE verification.

- Management control is determined by payroll details and is measured according to the level of control that black employees hold within an SME.

- An SME's skills development code measures the extent to which employers support ways in which the competencies and skills of black employees can be improved.
- A business's socioeconomic development measurement is determined at year-end and concerns the

extent to which an SME carries out specific initiatives that contribute towards better economic access for black individuals.

- Finally, enterprise and supplier development is measured by the extent to which an SME procures goods and services from suppliers with B-BBEE recognition, whether an SME takes measures to develop other enterprises and assists suppliers to become more economically sustainable.

Level up

“Your scorecard will determine your B-BBEE status or the level at which are you recognised,” says Morobe. “Level 1 companies have scores of 100 points and above, and the lowest level, level 8, applies to companies with less than 39.99 points.”

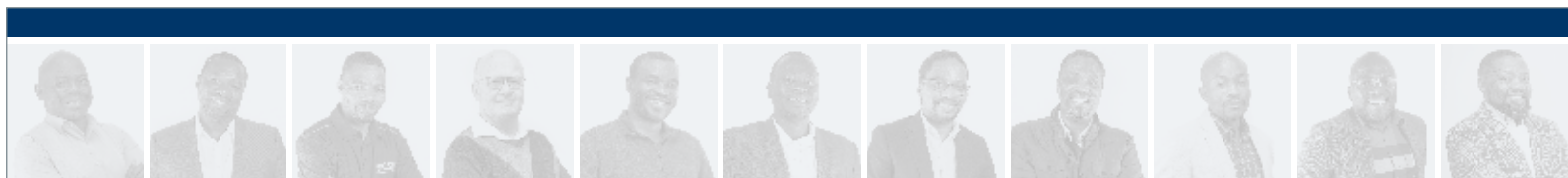
If a QSE is 100% black-owned, it will automatically qualify for level 1 status. If it is at least 51% black-owned, it will qualify for an automatic level 2 B-BBEE status.

"And if a QSE is less than 51% black-owned," says Morobe, "it will be rated according to the scorecard and must be verified by a South African National Accreditation System (SANAS) B-BBEE rating agency."

Changing legislation and what it means for your SME

With the changes to legislation set to be concluded later in 2022, a research note by consultancy firm, Songhai Advisory, forecasts that the Bill will allow the state to set employment equity targets for certain business sectors. Most significant for the majority of South African businesses is that the Bill will require the government to limit the issuing of contracts to businesses that are not compliant with B-BBEE law.

“Therefore, if a large component of your business model rests on securing state tenders and becoming a supplier to government, it is important that you work towards being B-BBEE compliant. Several large corporates have also developed policies that make B-BBEE compliance a mandatory requirement for their suppliers. In addition, as a B-BBEE compliant SME, you will gain access to a number of favourable tax gains and in general, will be better positioned to attract more business opportunities,” concludes Morobe.



National Cleaner Production Centre South Africa

20 years of Industrial Efficiency

We are **EPIC** - we pursue **Excellence**, celebrate **People**, personify **Impact** and welcome **Collaboration**.



www.ncpc.co.za | ncpc@csir.co.za



the dtic

Department:
Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA



CSIR
Touching lives through innovation

Funded by **the dtic**, hosted by the CSIR



INDUSTRIAL EFFICIENCY IN SOUTH AFRICA

Is your genset primed to switch on when the lights go off?

A back-up power supply such as a genset is critical to replace overall electricity demand during loadshedding. However, it is vital that such important equipment is maintained properly and serviced regularly to be able to cope with such outages.

“The probability of something going wrong may be slim in the mind of the end user, but in the likelihood that it does, the consequences can be potentially disastrous and even fatal,” says ASP Fire CEO Michael van Niekerk.

The first issue is fuel supply. This can range from an integral tank at the base of the genset to a 2200 litre Bulk to Farm (BTF) tank or a 210-litre drum. The presence of flammable liquids is an associated danger, especially in terms of refuelling and any spillages, so it is important to ensure that the storage of fuel is to code so that it does not pose a risk to the home or business’ generator.

Another issue is vegetation or combustible material encroaching on a genset, which can often be hidden away. The genset itself is a potential source of fire ignition due to the high temperatures of the manifold. If the genset is indoors, these temperatures can be considerable, especially if ventilation is inadequate.

Keeping the generator free of any combustible elements such as grass, weeds or litter is essential to reduce the risk of a genset fire. Proper maintenance is therefore essential. If an oil filter has not been screwed on tightly enough, for example, it can result in an oil leak. If oil sprays onto a hot manifold as a result, the oil will ignite, resulting in a fire.

Companies and individuals often lack the correct fire-fighting equipment to deal with genset fires. For example, a dry-chemical fire extinguisher will douse the flames, but not cool down any hot surfaces. A carbon-dioxide fire extinguisher, on the other hand, might cool down the overheated genset itself, but this can damage any equipment due to thermal shock. Foam based fire extinguishers are able to cool hot spots that may re-ignite fuel and the foam blanket will smother the fire, rapidly extinguishing it.

Gensets not only supply standby power but are essential to the day-to-day operations of institutions such as financial services and medical care. Hospitals, for example, will often have back-up gensets, all in the same room. If a fire breaks out in one genset, the rest of the equipment is immediately at risk.

All fire-suppression systems with mechani-

cal activation should be inspected monthly. Gensets should by rights be started up at least once a week to ensure the batteries are charged adequately. A cursory visual inspection will also reveal any potential problems or issues.

In terms of regulations and specifications related to gensets, such enclosures are classified as D4 for certain mini-

mum fire-proof requirements, including a specific fire rating for the walls. If the gensets in a building are not located in a purpose-built room and are hidden away in a basement next to parked cars, for example, it is a clear violation of the regulations.

“It is all about risk mitigation, based on how integral the genset is to the business in ques-

tion. While it is essential for financial service providers and hospitals to invest in the best systems possible, smaller end users also need to look at the impact of genset failure or fire on their businesses,” concludes van Niekerk.

Connect with ASP Fire: <https://www.linkedin.com/company/asp-fire-pty-ltd/>



A VACCINE AGAINST CLOGGING



AMAREX - Dual performance submersible pump

Vertical single-stage submersible motor pump for wet installation, with free-flow impeller (F-max), stationary or transportable version. Electrical submersible Motor sizes ranging from 1.1 kW to 10.2 kW.

Applications

- Pumping station
- Waste water treatment (Including sludge treatment and recirculation)
- Municipal and industrial waste water transport
- Storm water transport

Fluids handled

- Waste water containing long fibre and solid substances
- Fluids containing gas
- River water
- Service water
- Grey water

KSB Pumps and Valves (Pty) Ltd

Tel: +27-11-876-5600

www.ksb.com/en-za

Your Level 1 B-BBEEE Partner

150 YEARS
People. Passion. Performance.



THE BEE IN MY BONNET COLUMN

Looking through the wrong end of the telescope?

REGULAR readers will be aware of my enthusiasm for a deposit system to encourage recycling of plastic containers and aluminium cans.

While researching material for this month's feature on Recycling and Waste Management, and after reading about all the positive work undertaken by industry associations, recyclers and individual companies, plus the DFFE EPR regulations to make the producers responsible for recovering and recycling the packaging they produce to sell their products, I had the fol-

lowing thought.

Are all our efforts to benefit from a recycling industry and particularly job creation for the masses of unemployed people only adding to the problem of littering and dumping? Isn't the creation of jobs that are designed to pick up after people that have littered counterproductive?

Surely we should be trying to change people's behaviour to stop them littering in the first place and making it socially unacceptable - similar to allowing your dog to foul the footpath?

Many countries levy

hefty fines for littering and that includes dropping cigarette butts. In the UK for example, a fixed penalty fine is £150 (R3 000) rising to £2 500 (R50 000) if the matter goes to court.

In Singapore, first offenders are fined S\$1 000 (R12 000), while repeat offenders have their fines doubled and have to spend a few hours cleaning a public place.

These measures are designed as deterrents to change people's behaviour and to act responsibly in society.

Here heavy fines are also part of the statute with first timers

fined up to R8 700 and habitual offenders up to R17 400.

But when did you last see a 'Bobbie on the beat'? The chances of being caught, especially in a township situation are remote.

It was recently reported that Cape Town's Solid Waste by-law enforcement unit announced that, in the past six months, it had issued fines amounting to R1.3 million for cases of littering and illegal dumping.

Urban waste management mayoral committee member Grant Twigg admitted that illegal dumping was a

City-wide problem, but areas that were specifically affected included Philippi, Khayelitsha, Mitchells Plain, Kuils River and Athlone, and that the City cannot have eyes on every street corner.

Why do people litter? Apart from laziness or incapacity, the disposal of a container which has no value is simply a pain so why not just chuck it away?

My argument which is not original, is to give the container a value which is redeemable at an easily accessible depot. Adding R5 or R10 to the price of a cool drink when

originally purchased and is known to be redeemable would I assert, quite drastically change the littering mentality. For the poor unemployed person, collecting 20 plastic or aluminium containers would yield him or her R100 with very little effort and promote a cleaner environment to benefit us all.

A Swedish organisation, Pantamera, has this process down to a tee, and with Swedish Government support and oversight, has taken recycling to its logical conclusion with the installation of plastic and aluminium

gobbling vending type machines installed in convenient retail spaces, which importantly dish out an agreed deposit. Its collection system is very sophisticated but the collection aspects are the same as we face here - giving the previously worthless product a value encourages an easy mindset change without penalising the user. Sure, they pay more for the first purchase and providing they reclaim their deposit by voluntarily recycling, there is no penalty. Why wouldn't they do it?

Eish.

Another fire season is looming – how many more deaths?

THE number of people living in informal dwellings in the Cape Town metropole is staggering - although official figures are hard to come by, an NGO estimates as many as 2-million people are shack or backyard dwellers, some of whom have been waiting for more than 20 years for a formal dwelling unit.

The City is battling to cope but has reportedly released 9 000 starter kits comprising zinc coated corrugated steel in the last three months alone.

Figures extrapolated from the Stats SA 2011 census figures suggest there are well over 400 000 shacks in the Metropole and statements issued by the City for the first eight months of 2021 showed that it responded to 1 195 fires in informal settlements.

The number of deaths caused by shack fires topped 80 lives in the first eight months of 2021 according to GroundUp, while hundreds have been displaced.

The situation is dire, and while there isn't an immediate solution to the colossal housing problem, there are measures that can be taken to minimise the death and destruction caused when shacks catch alight.

Causes are not difficult to understand in overcrowded living conditions where five or more individuals share a 2,4 x 2,4 metre living space.

The open flame of candles, paraffin and gas appliances are obvious candidates which are used for heating in bitterly cold winters coupled with inflammable cardboard and plastic bottles and sheeting used to block up gaping holes in the structure. All these materials are fuel for intense fires which quickly reach 1 000°C in just a few minutes, especially if fanned by a Cape South-Easter, providing little time for the victims to escape...



Picture credit: City of Cape Town.

Passive fire protection – a proven answer

Mandoval is a major provider of Vermiculite based passive fire protection products in SA.

"Passive fire protection is something that is built into a building to try to protect people if there is a fire" explained Mandoval and patent company Erakis CEO Andrew Lashbrooke.

"The idea is to contain the fire so it does not spread (compartment-

alisation) and to protect the structure for as long as possible to allow the fire firefighters to get to the site and extinguish the blaze and to allow people to escape".

Mandoval's Tekrok C product has been tested by the SABS and is specially formulated fireproofing plaster, designed to withstand the extreme fire conditions associated with the petrochemical industry. Tekrok C has also been formulated to withstand

moderate resistance to impact, most industrial chemicals and can be used indoors and outdoors in extreme weather conditions without any deterioration plus the coating has the advantage of creating additional water proofing and insulation during cold and hot weather conditions.

Tested

In 2021 Mandoval gained approval by the City to conduct tests to demonstrate the fire retarding properties of the product in a simulated shack fire which was carried out under controlled conditions at the Epping Fire Station.

The simulation comprised six structures in total, including five made from corrugated iron and one from wood to imitate typical real life conditions. Tekrok C was sprayed onto two of the corrugated iron structures and also onto the wooden one.

The remaining three corrugated iron structures were not sprayed with the product.

The burn lasted approximately one hour before being extinguished and in this time, the uncoated structures took approximately 15 minutes to burn to a

point of collapse while the plastered corrugated iron structures withstood the burn and effectively resisted the transfer of the fire from the uncoated structures. The effect was the same for the wooden structure. The weather conditions were mild with a moderate breeze. In strong winds, which are the conditions of most severe informal settlement fires, the similar results could be expected.

Extended benefits

"Our company has been in existence for 75 years and in the forefront of many of the leading passive fire applications used throughout the world. We look forward to working with the authorities, fire services and communities to identify opportunities to apply Tekrok C and providing residents with improved comfort and security," said Lashbrooke.

"The application equipment and the skills to apply it are easy to acquire. We are prepared to train women and young people if taken forward, thus creating employment.

"In addition to the passive fire protection benefits, it seals the dwelling making it waterproof and is a great insulator meaning that homes will be cooler in summer and warmer in winter, which in itself might lead to fewer fires. It can also be painted, so once completed an individual or community can decorate their community as they wish" Lashbrooke explained.

Expected Outcomes / Benefits

"Tekrok C – even if applied to the outside of a building will contain

a fire if it starts inside a protected structure.

The building will burn and the contents will be lost, but this is not about stopping fires occurring or even stopping them dead in their tracks if they do occur.

"It is about limiting damage, providing people with time to get out and away from the fire area so lives are not lost, and giving time for the authorities to get to the site and put out the fire before it spreads and causes massive loss of property and lives.

Economics

"This is an inexpensive solution that can save lives!" implored Lashbrooke, "but economies of scale will make the application of the product more attractive to funders."

And thereby lays the nub of the problem. The City's budget for informal housing is approximately R3-bn pa bolstered with additional central Government grants of more than R1-bn. Compare this to R23-bn for health and a similar amount for education.

The informal housing problem is huge and requires decisive action and appropriate funding, but a start could be made in safeguarding life and property. This Mandoval product is locally produced and its application could create jobs. "What we really need is the City to permit us to do the pilot so that we can prove the benefits in real conditions. Based on the benefits proven to communities and the authorities the funding will be found from authorities, company social responsibility programmes and from relevant NGOs" he concluded.

MANDOVAL
VERMICULITE INNOVATION

Mandoval is the leading developer, manufacturer and distributor of Vermiculite and specialised fire protection products used in construction, agriculture, horticulture and the petrochemical sector

Various Fire Protection Solutions Available:

- ✗ Panel Seals
- ✗ Cable Coatings
- ✗ Intumescent Coatings
- ✗ Pipe Wraps and Seals
- ✗ Fire Protective Plasters
- ✗ Fire Protective Sealants

Licensed distributor of
KBS®
A trademark of
FIRE PROTECTORS
Saving Lives – Saving Assets

FSI
FIRE PROTECTORS
SAVING LIVES – SAVING ASSETS

ISO 9001:2015 Certified



Cape Town:
021 417 1700

Johannesburg:
011 864 5205

Durban:
031 705 5823

National Number:
08 6000 3333

www.mandoval.co.za
sales@mandoval.co.za

Hitachi Energy showcases the world's first eco-efficient 420 kV circuit-breaker

Breakthrough technology unlocks the widest range in eco-efficient switchgear applications and accelerates the energy transition.

HITACHI Energy has unveiled the world's first eco-efficient 420-kilovolt (kV) circuit-breaker in conjunction with CIGRE Session 2022. This breakthrough technology marks a significant milestone in its accelerated EconIQ™ high-voltage portfolio roadmap that was announced at CIGRE Session 2021.

For over two decades, the company has been investing in eco-efficient alternative solutions to sulphur hexafluoride (SF6) including the world's first 170 kV eco-efficient gas-insulated switchgear (GIS). The EconIQ high-voltage portfolio uses a game-changing technology that eliminates sulfur hexafluoride (SF6), a greenhouse gas. Over time, it has been successful in continuously increasing the voltage levels of its EconIQ high-voltage portfolio.

Today, the EconIQ 420 kV circuit-breaker marks a key milestone in the industry to transmit large amounts of electricity over long distances while eliminating significant vol-



World's first fully tested SF6-free 420 kV circuit-breaker where all relevant tests described in the IEC and IEEE standards for 63 kA, 5000 A, 50 and 60 Hz have been successfully performed.

umes of SF6.

This innovation is the key enabler to achieving a wide range of EconIQ switchgear applications, and will be used in both dead tank breaker (DTB) and gas-insulated switchgear (GIS). The EconIQ DTB and GIS are expected to be released at the end of 2022, on track with the company's roadmap.

"This 420 kV breakthrough is a demonstration of our technology that is reliable and scalable to reach ultra-high-voltage

levels with the lowest carbon footprint," says Markus Heimbach, Managing Director, High Voltage Products within Hitachi Energy. "We are enabling our customers and the industry as a whole to rapidly transition to eco-efficient solutions to advance a sustainable energy future for all," he added.

EconIQ is Hitachi Energy's eco-efficient portfolio for sustainability, where products, services and solutions are proven to deliver

exceptional environmental performance. Hitachi Energy has placed sustainability at the heart of its Purpose and is advancing a sustainable energy future for all. Its high-voltage portfolio also includes EconIQ Retrofit, another world's first in replacing SF6 in existing high-voltage equipment and EconIQ gas-insulated current transformers. The EconIQ high-voltage technologies are widely adopted by key customers in Europe.

Cummins offers a power ecosystem for IPP's

By Warrick Gibbens, Power Generation Leader, Cummins Southern Africa

CUMMINS' sophisticated technologies are designed to support integrated microgrid solutions around the world, from off-grid and remote locations to urban and life-saving applications. Our solutions fully integrate all components of a microgrid, including diesel and natural gas gensets, hydrogen technologies, renewable energy sources, battery storage systems, system level controls, transfer switches, and remote monitoring capabilities.

Microgrids are locally controlled power sources that can integrate multiple energy resources such as diesel, gas, wind, or solar power. Microgrids provide independent power so that when the traditional power grid experiences loadshedding, for example, a microgrid can immediately switch to backup generators and batteries.

The microgrid control allows the components to function as a seamlessly integrated

power source so that weather, utility prices, and performance data can be monitored to enable well-informed decisions to assist in keeping costs low and Powering a World That's Always On™.

The advantages of microgrids are:

- **Resiliency:** When one energy source fails, microgrids ensure continuous power by immediately switching to other connected sources.
- **Decarbonisation:** Microgrids can incorporate renewable energy sources, offering a practical solution for decarbonisation efforts.
- **Efficiency:** Intelligent microgrid controls monitor performance to ensure efficiency. Energy resource technologies, available government incentives and utilities can reduce the total cost of ownership.
- **Flexibility:** Modularity caters for changing energy needs with ease by matching the provided power to the needed load.

Cummins' range of diesel and natural gas generators are suited for all microgrid power generation requirements, ranging from 17 to 3 750 kVA. Advanced Microgrid Controls support multiple configurations and design implementation solutions to adapt to evolving microgrid requirements. With a single interface, this control supports a truly integrated microgrid power system.

Power Command Cloud™ is a cloud-based system for to check system status, identify faults, or access critical notifications remotely. Trend data can be accumulated over time to optimise resources, balance loads, and inform decision making to optimise operations.

Cummins works with third-party providers as needed to incorporate battery storage and solar photovoltaic equipment. In addition, it continues to invest in future technologies and products to meet emission requirements around the world, supporting the push for decarbonisation.

Protection for Samsung Pay users against SIM-swap fraud



Ellezane Williams.

CAPITEC customers now enjoy added protection when using Samsung Pay thanks to Entersekt's SIM age validation capability, also known as MNO (Mobile Network Operator) Authentication. The silent risk signal, which recognises if a SIM card has recently been swapped, helps crack down on the concerning rise in local SIM-swap fraud.

South Africans have been particularly vulnerable to SIM-swap fraud, with SABRIC's latest report showing that SIM swaps accounted for 92.7% of mobile banking fraud incidents reported in 2020. The report states that SIM swapping is the

most commonly used modus operandi for committing crime on this channel and that, "the increased ability of criminals to carry out SIM swaps may account for the significant increase in incidents (67.6%) and gross losses (62.1%)."

When adding their debit or credit card to their Samsung Pay app, Capitec cardholders must authenticate themselves for security purposes by entering a one-time PIN (OTP) sent via SMS. Before the SMS OTP is sent to the cardholder, Capitec's system uses the Entersekt MNO Authentication solution to see if the customer's SIM has been swapped recently. If it passes the validation, the SMS OTP is sent and the customer's card is tokenized for safe use on the Samsung Pay App.

"The SIM info check capability allows Capitec to get real-time insights from the customer's MNO about the age of

the SIM card. This helps to determine whether it has recently been ported or swapped and gives an indication of the potential fraud threat," explains Entersekt Solution Architect Manager, Ellezane Williams. "The whole process takes as little as three seconds and allows Capitec to minimise the chances of fraudsters intercepting the initiation OTP at this vital stage of the process. This silent SIM check happens entirely in the background but provides Capitec customers with an additional layer of security, preventing fraudsters from loading an unsuspecting victim's card to the fraudster's Samsung wallet."

For Capitec, the Entersekt solution ticked a number of boxes, especially when it came to just how quick and easy it was to integrate this new feature.

"This Entersekt SaaS solution allows us to offer our customers a vital additional layer of security without compromising our client experience. What's more, because we already use Entersekt hosted services, our inte-

gration was quick and painless, with a one-call API and no additional infrastructure needed. This solution fits our goal of continuous innovation without compromising on security. To date, the Entersekt SIM Age Validation has already helped us safely onboard more than 30 000 new Samsung Pay users," shares Gideon de Wet, Product Head: Digital Card at Capitec.

While perfect for financial institutions of all kinds, the Entersekt SIM Age Validation solution can also help protect all businesses that make use of SMS OTP as an authentication mechanism.

"Protecting sensitive information must be a priority for businesses across all sectors. By applying a quick and silent SIM check, organisations can significantly boost their security without their customers even knowing the checks are happening in the background. This solution should be an obvious choice for all businesses using SMS OTPs to authenticate users for any reason," Williams says.

Petrol prices in South Africa increased by 19.6% - the highest in Africa



FOR the fourth year in a row, the Picodi.com analysts team has created the 'Petrol Index' report.

The report shows how much petrol can be bought with an average wage in 102 countries. According to Petrol Index 2022:

- Petrol in South Africa is the most expensive in the region at \$1.51/litre
- The number of litres

of petrol that can be purchased with an average wage in South Africa decreased by 372 litres (865 litres compared to 1 237 litres last year)

- Despite the highest price and greatest price increase (+19.6%) in the region, South Africans can still buy the most petrol.
- Algeria is the only

country in the region that didn't experience petrol price increases.

In the report, you can find infographics, which can be freely copied and used.

More information can be found in the whole report linked here: <https://www.picodi.com/za/bargain-hunting/petrol-index-2022>

Vestas will keep raising wind turbine prices

"Prices must continue to rise. My clear opinion is that it's never enough," says Vestas CFO Hans Martin Smith.

WIND turbine prices must increase further, says Vestas Chief Financial Officer Hans Martin Smith in an interview with MarketWire following the release of Danish OEM's second-quarter report.

The average sales price of onshore wind turbines during the period was €0.96 per MW, marking a 22% increase against the same period last year.

Even so, the CFO says prices must rise even more.

"I have standard reply: You'll never get me to say otherwise; prices must continue to rise. My clear opinion is that it's never enough. Of course, we're pleased with the orders we have booked



Source: Vestas.

– we're satisfied with these – but I'll also say that there's no reason to stop here," Smith says.

"Now we're in a fine process of increasing prices, and both myself and the rest of executive management are advocating that we continue doing so," the CFO remarks.

Vestas has previously criticized price discipline in the industry, but now there are signs of improvement in that regard, Smith relays.

"It seems improvement is underway. Naturally, it's hard to say what's happening among the other [wind OEMs]. Nor is that a

matter I'll sit here and analyse. Although I will say the industry is slowly improving in this regard," Smith says.

Article originally appeared in Energy Watch: <https://energywatch.com/EnergyNews/Renewables/article14296747.ece>

All-in-one solar-powered tower makes carbon-neutral jet fuel

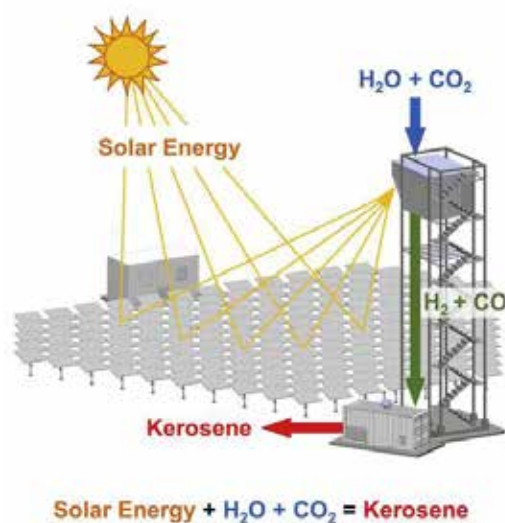
By Cell Press

RESEARCHERS have designed a fuel production system that uses water, carbon dioxide (CO₂), and sunlight to produce aviation fuel. They have implemented the system in the field, and the design, publishing July 20 in the journal *Joule*, could help the aviation industry become carbon neutral.

"We are the first to demonstrate the entire thermochemical process chain from water and CO₂ to kerosene in a fully-integrated solar tower system," says Aldo Steinfeld, a professor from ETH Zurich and the corresponding author of the paper. Previous attempts to produce aviation fuels through the use of solar energy have mostly been performed in the laboratory.

The aviation sector is responsible for about 5% of global anthropogenic emissions causing climate change. It relies heavily on kerosene, or jet fuel, which is a liquid hydrocarbon fuel typically derived from crude oil. Currently, no clean alternative is available to power long-haul commercial flights at the global scale.

"With our solar technology, we have shown that we can produce synthetic



Graphical abstract. Credit: *Joule* (2022). DOI: 10.1016/j.joule.2022.06.012.

kerosene from water and CO₂ instead of deriving it from fossil fuels. The amount of CO₂ emitted during kerosene combustion in a jet engine equals that consumed during its production in the solar plant," Steinfeld says. "That makes the fuel carbon neutral, especially if we use CO₂ captured directly from the air as an ingredient, hopefully in the not-too-distant future."

As a part of the European Union's SUN-to-LIQUID project, Steinfeld and his colleagues have developed a system that uses solar energy to produce drop-in fuels, which are synthetic alternatives to fos-

sil-derived fuels such as kerosene and diesel. The solar-made kerosene is fully compatible with the existing aviation infrastructure for fuel storage, distribution, and end use in jet engines, Steinfeld says. It can also be blended with fossil-derived kerosene, he adds.

In 2017, the team started scaling up the design and built a solar fuel-production plant at IMDEA Energy Institute in Spain. The plant consists of 169 sun-tracking reflective panels that redirect and concentrate solar radiation into a solar reactor mounted on top of a tower. The concentrated solar energy then drives oxidation-reduction

(redox) reaction cycles in the solar reactor, which contains a porous structure made of ceria. The ceria—which is not consumed but can be used over and over—converts water and CO₂ injected into the reactor into syngas, a tailored mixture of hydrogen and carbon monoxide. Subsequently, syngas is sent into a gas-to-liquid converter, where it is finally processed into liquid hydrocarbon fuels that include kerosene and diesel.

"This solar tower fuel plant was operated with a setup relevant to industrial implementation, setting a technological milestone towards the production of sustainable aviation fuels," Steinfeld says.

During a nine-day run of the plant reported in the paper, the solar reactor's energy efficiency—the portion of solar energy input that is converted into the energy content of the syngas produced—was around 4%. Steinfeld says his team is working intensively on improving the design to increase the efficiency to values over 15%. For example, they are exploring ways to optimize the ceria structure for absorbing solar radiation and developing methods to recover the heat released during the redox cycles.

Improved internet for Nigeria and South Africa

The new Equiano subsea cable will link Africa to Europe via the West Coast of Africa when it is ready for service later in 2022.

LIQUID Intelligent Technologies has acquired a fibre pair on the Equiano subsea cable, allowing Liquid to transport traffic up to 12 Terabits, bringing a much-needed increase in international connectivity in Western and Southern Africa. With older subsea cables almost at the end of their lifespan, Liquid through the Equiano cable system will address the growing need for Internet capacity supporting cloud services in both coastal and landlocked countries on the continent.

The new Equiano subsea cable will link Africa to Europe via the West Coast of Africa when it is ready for service later in 2022, providing Terabit/s of capacity to meet the growing and varied business needs of organisations across Europe, Western and Southern Africa. Through its extensive fibre backbone and satellite services, Liquid can offer reliable telecommunications

and cloud services to over 1.3 billion people across thousands of towns and cities in Africa.

"In the last few years, we have witnessed a steady increase in adoption of digital technologies. This wouldn't have been possible without our investments in high-speed connectivity in coastal as well as landlocked African countries," says David Eurin, CEO Liquid Dataport. "The continent needs companies like Liquid who not only land Terabit/s of capacity with subsea cables but also distribute that capacity inland, enabling these countries to see the same benefits as those where the cable lands."

The Equiano subsea cable has landings planned in Sesimbra (Portugal), Lomé (Togo), Lagos (Nigeria), Swakopmund (Namibia), Rupert's Bay (Saint Helena) and Melkbosstrand (South Africa), landed in August, with more landing stations

planned in the future. The move extends Liquid's One Africa Digital Network's reach into Africa, providing connectivity to large data centres on the continent while granting access to major commercial hubs. Liquid plans to interconnect the Equiano landing stations to its East-West network across Africa, creating a new global IP route between Asia, Africa and the USA.

Liquid's investment in Equiano will help provide seamless connectivity for its clients across Africa, complementing its own existing national and metro fibre networks and offering increased resilience thanks to its connection to other subsea and satellite networks. Looking further, the deployment will bring the benefit of access to large capacities and low costs to cross-connect from subsea to terrestrial backhaul, which should lead to lower prices for both consumers and businesses.

The definitive annual review of the container equipment market

THIS is Drewry's annual review of the container equipment and leasing industry, based on a global census of fleet owners and a diverse range of forecasts unique to Drewry.

It provides a level of detailed analysis and expert commentary not found elsewhere and is also available as an annual subscription package with the Container Equipment Forecaster which provides quarterly market updates as well as our latest forecasts.

Key areas of analysis within the Container Census & Leasing Annual Review and Forecast 2022/23 include:

- Development of the global container equipment fleet and structure, broken down by individual operating type, including 5-year forecasts
- Global production trends of new con-

tainers and 5-year forecasts, covering output, capacity, plant utilisation and costs, as well as manufacturer profiles

- Fleet ownership profiles and forecasts by container type, geography and owner category, including acquisition and disposal trends as well as profiles and rankings of the top lessors
- Assessments and 5-year forecasts of newbuild and secondhand pricing, leasing rates, rehire rates and investment cash returns
- Extensive profiling and 5-year forecasts of all the main equipment types including dry standards and specials, refrigerated, regional and tank container fleets

- Expanded analysis and 5-year forecasts of the tank container market, including detailed breakdown by 5 categories of tank container types, as well as lessor and operator profiles

- Analysis covering the fast emerging smart container market, including estimates and 5-year forecasts of smart device installation rates

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

<https://www.drewry.co.uk/maritime-research-products/container-census-leasing-annual-report-202223>

Wacker Neuson progresses in Ethiopia



THE first twelve months following the signing of an exclusive dealer agreement with Ethiopian-based Leon's Mercantile Plc., has resulted in Wacker Neuson's light and compact equipment finding wide acceptance with customers in the country's construction and agricultural sectors.

Dennis Vietze, Managing Director for Wacker Neuson Sub-Saharan Africa, explains that the business relationship dates back to 2019 when Leon's Mercantile expressed interest in becoming a Wacker Neuson dealer for the Ethiopian territory. "Added to the fact that we did not have a dealer in the region, Leon's Mercantile successfully serves two of our primary sectors in Ethiopia, the construction and agricultural industries. What was also of interest to us was their existing infrastructure at their head office in The Piazza, Addis Ababa, and in Sengatera which includes showrooms, workshops, and vehicles. So, we made the smart move by adding Leon's Mercantile to our Wacker Neuson dealership."

Leon's Mercantile Plc. was established in 2005. Its Addis Ababa headquarters comprises an office area and showrooms. "We are in the process of extending our premises in Sengatera with the construction of a new large showroom as well as a workshop and store areas," affirms Sevag Behesnilian, General Director of Leon's Mercantile. "Our skilled team of 24 employees is armed with an excellent educational background and many years of industry experience."

In line with the dealer agreement, Leon's Mercantile's Wacker Neuson fleet comprises concrete technologies (mechanical internal concrete vibrators, power floats/trowels), compaction technologies (rammers, plate compactors), and power equipment (petrol generators).

Sevag weighs in on the added value of the dealer agreement: "It serves as a testimonial for our customers that

Leon's Mercantile Plc. is the sole supplier in Ethiopia of original and genuine Wacker Neuson products. Owing to the expansion of our Wacker Neuson fleet, the agreement has carved new markets for us. Moreover, Wacker Neuson is a German brand, which is recognized by our customers as being renowned for the highest standards in strength, durability, reliability, and efficiency. In fact, it is due to these very features that the concrete vibrator is the most popular Wacker Neuson product with our customers."

The team of skilled technicians at Leon's Mercantile is responsible for aftersales service, maintenance, and repair of Wacker Neuson equipment. "Alongside our well-equipped, state-of-the-art workshops, we also have ample carrying capacities for stock and spare parts," adds Sevag. "Our workshops and aftersales services have been specifically organized to ensure excellent service delivery for complete customer satisfaction and peace of mind."

Wacker Neuson supports Leon's Mercantile through sales, product and technical training. "Training is being conducted virtually as well as in person at the Wacker Neuson Academy in Johannesburg, to ensure that the Leon's Mercantile team of technicians is fully versed in our product line-up," states Dennis. "We are equipping them with the necessary skills and knowledge so that they can deliver a best-in-class service offering to maximize customer uptime and productivity. Leon's Mercantile is a well-established, professional, and well-respected company, and having a dealer of this ilk in Ethiopia has firmly rooted Wacker Neuson as a well-known and esteemed brand in the region. We look forward to continue building on this mutually successful business relationship with Leon's Mercantile," concludes Dennis.

For more information visit: www.wackerneuson.co.za

Timber look-alike frames architectural possibilities

MODERN buildings need to meet a variety of criteria that, historically, were not concerns: from stringent safety standards to environmental friendliness and low energy requirements. The key is not simply in design but in the application of new materials that meet these diverse needs.

Eva-Last's Lifespan hybrid aluminium architectural beams are an example of a highly engineered building material that meets all traditional norms while allowing for a diverse range of aesthetic applications. Featuring a specialised aluminium core for easier installation at height and which is resistant to biodegradation, UV exposure fading, corrosion, biological pests (such as termites, fungi and bacteria) and even the harshest weather, Lifespan provides the look of timber beams without the upkeep of wood or susceptibility to the elements of alternative metal options.

Lifespan's reinforced

bamboo composite beam (Tri-extruded lightweight aluminium 6063-T5 core and cellulose-polymer composite cap), forms the basis of its extreme versatility and durability. With increased span capability, Lifespan is ideal for decorative architecture of all types, including pergolas, privacy screens, shutters, facades, gates, cladding and soffits.

Shaun Erasmus, director: in-market technical support for Eva-Last, says the range of profiles - some weighing as little as 0.78kg per metre - makes Lifespan suitable for every application from lightweight non-structural features such as balusters and railing to decorative trussing and oversized pergolas. "Lifespan posts can even be used to create durable vertical railing and show stopping outdoor features requiring a high degree of tensile strength."

A benefit which is often unnoticed by casual observers is



that Lifespan's colour-matching end caps provide a finished look while protecting the hollow chambers of the aluminium core. "Lifespan allows for greater design creativity than traditional materials like wood, and even where there are joins, no brackets are required," says Erasmus.

The Lifespan range is available in the full Eva-Tech colour palette, offering classic and timeless natural colours in a matte finish to suit any design and colour

scheme. Each colour evokes the essence of a particular timber application, in a neat, brushed finish that is both sleek and understated.

Unlike the timber its external appearance imitates, Lifespan is an environmentally friendly and sustainable alternative to wooden beams, requiring none of the maintenance associated with wood and features flexural stability that far surpasses equivalent timber profiles at reduced mass and weight. (Mod-

ulus of rupture (MOR): 60.0 MPa; Modulus of elasticity (MOE): 1.1 GPa.)

The manufacturing process includes the use of solar energy, further cementing it as a sustainable building product.

"Lifespan's light weight construction prevents deflection, for aesthetic and structural benefits, and eliminates the need for timber sourced from old-growth trees that would be required to span similar distances" Erasmus says.

“CONTINUOUS
INNOVATION,
COMPELLING
NEW STYLES”

WWW.CERAMIC.CO.ZA

Our heritage has shown that we are innovators in style and technology. Surround yourself with the most beautiful technological advancement you can find – Ceramic Industries have been quietly turning out world-class products since 1975. Our innovative production techniques reduce carbon emissions and result in the kind of high-quality products you'll want to come home to again and again. World-leading equipment producing innovative, stylish products - locally!

CERAMIC INDUSTRIES • WORLD-CLASS PRODUCTS MADE LOCALLY



PROUDLY
SOUTH AFRICAN



The Greater Tygerberg Partnership grapples with waste and unemployment in Bellville

By Staff Reporter

THE Greater Tygerberg Partnership (GTP) has launched an extensive upliftment programme in its northern suburbs. In co-operation with the private sector, other NPOs, and the City of Cape Town, the GTP has a solid strategy for rejuvenating the City of Tygerberg. The GTP and the City of a Cape Town have a standing MOU – a memorandum of understanding agreement, which they renew every three years.

“We would like to make Bellville a go-to zone for businesses and city dwellers, so attracting investors, developers and stakeholders is vital. “I want to inspire the community to act on their own behalf, to reduce waste,

to uplift the homeless, and to rebuild an economic hub,” says Warren Hewitt, CEO.

One major aim is to reduce waste to landfill in Bellville, a daunting but important task. The GTP identified schools as positive starting point as they are a microcosm of the broader community, a project which can be reproduce on a large scale.

The GTP has achieved encouraging results through the schools-focused recycling and waste management drive launched in 2019. Key to this process was inspiring young people through education, teaching them about waste and personal hygiene, something they took home to their families.

One of first projects was at DF Malan



Bellville South Ward Councillor, Mercia Kleinsmith with Warren Hewitt, CEO at GTP examining locally designed trolleys used to collect and sort waste from around 130 businesses.

High School, Meyererton, which has approximately 1 200 learners. This included setting up stations for sorting, recycling, and composting organic waste and

by the end of the year had reduced their waste to landfill by 60 percent. They saved money by reducing their municipal bin collection and now earn up to R6 000

a year selling recyclable materials.

Creating employment

The GTP tackled unemployment in

Bellville by training the homeless as waste-pickers in the CBD. Now thirty-eight waste-pickers use locally designed trolleys to collect and sort waste from around 130 businesses, and buy-back waste companies pay them R95 per day for their services.

The pickers can rent a shelter bed nightly for a small fee at the Safe Space, a shelter created by MES (to Mould, Empower, and to Serve), an NPO with a countrywide network.

Organic waste worries

“Our audits on this waste revealed a disturbingly significant amount of toxic waste entering the water systems, posing a serious threat to human health.

One strategy is for

the GTP to clean up Bellville by diverting organic waste away from landfills to composting centres. One such project is using premises owned by MES, where the GTP has set up composting systems in order to develop the urban food garden, a healthy food supply or the homeless grown by four waste-pickers.

“We’ve learned much from similar programmes run in Cape Town and now have the know-how and some of the technology we need.”

There is also the potential for waste management companies to use oils and similar end products to create biofuels for industry.

For more information: ceo@gtp.org.za

Five Stars and a first for Concor

CONCOR, a diversified infrastructure and services construction company has earned a Five Star Safety Grading from the Master Builders South Africa (MBSA) and also secured first place in the National Safety Competition in Category G for projects between R250m and R450m. Both these accolades are in relation to Concor’s construction of the Trevenna Basement project in Sunnyside Pretoria commissioned by the Public Investment Corporation (PIC).

Both the award and the Five Star Safety Grading from the MBSA reflect the highest level of safety compliance by this leading black-owned construction company. The results are based on a stringent audit process including an on-site audit at the Trevenna site, where Concor began construction early this year. According to Martin Muller, Concor contract manager, the 11-month contract comprises a five level, 68 000 m2 super basement with all services, lobbies and finishes.

“We have deployed five tower cranes on the site to fast track the project, ensuring the safe movement of steelwork, formwork and other construction material,” says Muller.



From left the Concor Team - Margaret Dube, HSE co-ordinator; Andrew Kgasago, site agent; Martin Muller, contracts manager and Givemore Mupondi, HSE safety officer.

Readymix concrete is being used for the in-situ construction of post-tensioned slabs, with space at a premium due to the busy urban location.

“The exciting results of this compliance audit and the MBSA National Safety Competition hold great credibility as we have been audited and rated in relation to our peers in the sector,” he says. He notes that Concor also conducts its own internal safety audits during the life of the project in line with the Occupational Health and Safety Act and other related regulations.

Concor health, safety and environment (HSE) coordi-

nator Margaret Dube says the MBSA audit included a detailed physical inspection of site activities, housekeeping, cranes and equipment. Aspects such as temporary formwork are also required to be signed off by the responsible engineer.

“It also checks that all our documentation is compliant with legal requirements,” says Dube. “After scrutinising the condition of our cranes, for instance, the audit team will also check that this equipment has been inspected by a qualified lifting machinery inspector (LMI).”

She highlights the importance of the company’s HSE

awareness philosophy: Stop.Think.Act! By applying this culture through visible felt leadership, safety is prioritised among staff and subcontractors alike.

“Wherever we work, it is vital for Concor managers and supervisors to lead from the front, providing an example for the whole site,” says Muller. “This leadership must apply as much to safety as to production.”

“Concor will continue to elevate health and safety at all its sites, while delivering on projects on behalf of its clients,” Muller concludes.

For more information visit: www.concor.co.za

SGB-Cape’s innovative solution ensures cooling towers remains fully operational while maintenance is under way

SGB-Cape, a division of WACO Africa, has devised an innovative solution which allows the installation of floating pontoons to support scaffolding within cooling towers.

A first of its kind, SGB-Cape’s patented solution has enabled SA’s largest energy and chemical company, to remain operational while maintenance work was undertaken inside the cooling towers.

Due to capacity constraints, shutting down the cooling towers for maintenance was not an option. Instead, SGB-Cape was able to erect scaffolding on floating pontoons inside the cooling towers. SGB-Cape has successfully completed three cooling towers since 2018 and currently commenced work on the fourth cooling tower project. Each cooling tower base typically covers 10 000m². This innovative solution ensured the client could keep 80% of the cooling tower operational while repair work was performed on 20% of the tower.

Floating pontoons.

Louis Naude, Divisional Director at SGB-Cape explained, “We came up with the idea of the building floating pontoons to allow us to erect scaffolding inside

the cooling towers. It was such an exciting project to work on and we are very pleased with the results. We brought in thousands of square metres of floating pontoons that floated in the live cooling tower waters, and then erected 350 tons of galvanised scaffolding to gain stable access to the cooling trays at a height of 14m. At the peak of each cooling tower project, our staff on-site worked day and night shifts, every hour of every day, to ensure that the project was finished within the shortest amount of time to get the cooling towers 100% operational.”

He continues, “We are very proud of the fact that, in a very challenging environment there have been zero serious safety incidents since the work commenced on the first cooling tower back in 2018.”

SGB-Cape’s service on the project includes:

- Special design of floating scaffold (registered IP)
- Installation of floating pontoon base
- Erecting, modifying and dismantling
- Installation and movement of netting inside the cooling tower by the same Rope Access technicians
- Emergency Rescue stand-by crews.



scaffolding inside the cooling tower on the floating pontoon

- Erecting crash decks outside the cooling tower to safely enable maintenance work on the outside of the cooling tower
- Sandblasting of columns inside the cooling tower for inspection purposes. This enabled the client to reduce the cleaning process by 2-3 days per section compared to high pressure water blasting

The reliability of LNG supply in South Africa

THERE are two key considerations when moving away from coal-powered energy. Firstly, what is the safety track record of the alternatives, and secondly can these alternatives reduce supply risk?

direct energy source with a high-efficiency level, especially for furnaces, burners, ovens, etc. whilst supplying backup power and a hybrid power solution whereby an operation uses a mix of solar, wind and gas as pri-

demand or substitute energy needs, directly tapping into the power grid. This affects the small to medium industries as well, with LNG being an ideal energy provider through ease of access and supply.

For LNG Hub, shifting to alternatives is a no-brainer. With long-term savings, reliability of supply and environmentally friendly, LNG is a product to rely on. The key is now for private and public players to take the step forward and embrace alternatives in the same way other countries have done for the last 20 years. Data may be light locally, but internationally the facts and figures speak for themselves.

(Coupled to realizing a 'Reimagined TNPA [Transnet National Ports Authority] through port infrastructure development is the execution of special projects, which saw the issuing of a Request for Information (RFI) in February 2022 for LNG at the Port of Richards Bay. Following a response from 19 major operators of gas infrastructure from across the globe, TNPA were to have issued a Request for Proposals (RFP) in July 2022. Ed.)

For more information contact: <https://lnghub/contact/>

Gas is a sensible, practical way to migrate South Africa to a low-carbon future

- André De Ruyter, CEO of Eskom.

Switching from coal is not just about the environment. Commercial and mining interests cannot afford to move to an alternative energy source that in the long run cannot guarantee continuous supply or compromised delivery through domestic unrest.

Alternatives – is the grass greener?

Ideally, alternatives should tick all the boxes, and this has contributed to a slow uptake in moving away from coal-powered energy and essentially moving off-grid. There is a lot at stake, very little localised data, coupled with the variety on offer industrial and mining clients have long considered the switch with little or no commitment.

To drive the move away from coal-powered energy, companies like LNG Hub have introduced a consultancy service, offering potential industrial and mining companies the opportunity to carefully plan the switch to an environmentally suitable energy mix. LNG Hub provides Liquefied Natural Gas (LNG) to a variety of industries using 3 key onsite solutions coupled with consistent supply (sourced locally) essentially ticking all the boxes with minimised risk.

The application of LNG

Furthermore, LNG is available in South Africa for various sized industries through long-term contracts with supply sources. With a 2050 vision for a sustainable energy mix, LNG is a front runner in the race to replace coal-powered energy. Applied to mining and manufacturing LNG can be a

many energy sources. In addition, an LNG Facility onsite can provide heat recovery and fuel for vehicles.

Liquefied Natural Gas – a placeholder or permanent solution?

LNG plants have supplied alternative energy worldwide since the early 1900s. The United States alone relies on 38% of its electricity from LNG. The core benefits of natural gas are flexibility of use and efficiency. Reducing environmental impact and maintenance requirements while limiting the risk, LNG on-site plants can integrate with renewables, supporting peak power

Diarise: 2nd Annual Southern Africa Oil and Gas Conference & Expo

15 – 16 September 2022 , The Westin Hotel, Cape Town,

“Shifting gear: towards a sustainable oil and gas future for Southern Africa”

WHAT excites one about the conference is the meaningful collaboration between industry, communities, government and other important role-players it creates. A second annual conference of its kind, the DMRE, PASA, SAOGA conference promises to be a highlight on the oil and gas and energy calendar yet again this year. With COVID19 behind us a large crowd is expected to attend.

The two-day conference provides an excellent opportunity for local and international companies, communities and government to network, exhibit and promote their products and services. The event is designed to improve access of local and international players to a quality topical oil and gas and energy conference, highlighting local and Southern African oil and gas industry opportunities.

With an excellent line-up of speakers, like; Eskom CEO Andre De Ruyter, senior Shell and Total representatives, the Executive Mayor of Mossel Bay, Councillor Dirk Kotzé among others, the conference will be a key attraction.

As usual, the Sub-Saharan African focus

is invaluable for companies considering expansion beyond the borders of South Africa. With developments and exploration activities rapidly expanding in Sub-Saharan Africa, it is important for industry to stay abreast of developments in the region. It will be extremely valuable to have credible updates on opportunities and recent advances in Southern Africa's offshore & onshore oil and gas basins.

We look forward to oil companies, commissioners, bankers, lawyers and industry leaders from Sub-Saharan African countries like; Namibia, Mozambique, Uganda and Zimbabwe providing valuable updates on the progress their countries are making in the oil and gas industry and provide information on the business requirements in their respective countries.

The presentation on the socio-economic benefits of the upstream project – case study focused on TOTAL's Block11B/12B will undoubtedly draw attention, particularly against the background of Just Energy Transition discussion. The panel discussion where

Mossel Bay Mayor and industry leaders will zero in on the historic and potential socio-economic benefits of the oil and gas industry to the Garden Route District Municipal region promises to be insightful. The session will provide an important perspective on the value of the past and potential future impact of the Oil and gas industry in the region that cannot be ignored as we negotiate the future.

It is great that the Oceans Economy Masterplan will be in the spotlight at the event, with key players presenting. This is critically important, as industry and stakeholders will be provided first hand perspectives on initiatives the master-plan is aiming to address. The role players need to be held accountable for the implementation of the master-plan. The session will provide an opportunity for attendees to establish first-hand how they may participate. The plan is forward looking and is based on broad consultation with all the stakeholders.

As Hydrogen will be a future source of energy, it is encouraging that the conference will engage with

salient issues related to this energy source. An impressive line-up of speakers will focus on Hydrogen. The session promises to provide significant intelligence on what the future looks like for Hydrogen production in the region.

The presentation dealing with the technologies for reducing GHG emissions and the case study for zero scopes 1 emissions (Côte d'Ivoire an example) is not to be missed. The oil and gas industry is extremely conscious of protecting the environment and the session will demonstrate some of the new technologies that will help reduce carbon emissions.

The focus on women in oil and gas promises to be hugely insightful. The oil and gas industry is traditionally male dominated. Are we seeing change? What are the potential opportunities? How do women get involved?

In conclusion, I believe we can look forward to a brilliant time of engaging, reflecting, networking with key stakeholders, on issues that matter, to collaboratively seek solutions for the challenges facing the oil and gas and energy industry.

Trust in performance

Ensure superior results

EXELTOP™ combines the best of our experience and technologies into a advanced built-in regulator for shielding gas cylinders. Innovation is our focus at Air Liquide; we are driven to ease your work and assure your safety and earn more.

Gas flow stability & accuracy for high performance gas operation

- A quick and safe connection every time
- Intuitive design, easy to use
- Built to resist with strengthened guard



Cnr Old Vereeniging & Andre Marais Streets, Alrode, South Africa, 1451 | +27 87 288 1100



EXELTOP™

New emission compliant engine from Yanmar

SEASCAPE Marine Services, local distributors for the Yanmar range of marine diesel engines, have introduced Yanmar's latest marine propulsion unit, the 6AYE-M main engine with a dedicated SCR (Selective Catalytic Reduction) system to maximize performance and to effectively reduce harmful emissions.

Selective Catalytic Reduction (SCR) is an advanced active emissions control technology system that reduces tailpipe emissions of nitrogen oxides (NOx) down to near-zero levels in newer generation diesel-powered vehicles and marine propulsion units. The SCR system involves several components packaged together with other parts of the emissions control system.

Since YANMAR's founding more than 100 years ago, the company has been driven by a pioneering spirit for world-leading technology and mindful of its obligations to the environment has developed the 6AYE engine range which is certified to comply with the IMO's (International

Maritime Organisation) Tier 3 emission regulations.

The 6AYE-M is a six cylinder high speed turbo charged and intercooled diesel engine that produces 610 kW at 1 900 r/min with an estimated fuel consumption of 150l/h. The addition of common rail technology to Yanmar's 6-cylinder high speed marine engine portfolio brings major benefits to commercial marine customers looking for a cleaner engine without sacrificing power or fuel economy.

Precision combustion chamber design along

with multi-stage common rail fuel injection via the 8 main and 4 secondary nozzles gives super-low emissions while maximizing torque at low or high revs. This staggered approach makes starting easy and reliable – preheating is not required.

Of particular importance to commercial vessel operators and builders is the ease of installation and maintenance. Various electronic control options all offer specific controls and basic operation, while maintenance is kept simple, with all inspection ports and service

points readily accessible and individual cylinder heads allowing pistons to be lifted with the engine in-situ. Yanmar's well-known durability and reliability is built-in to the 6AYEM, offers high levels of safety alongside unrivalled life cycle value.

For more information contact Seascope Marine Services. Website: <http://seascapemarine.co.za> Email: info@seascapemarine.co.za Tel: +27 21 511 8201 Address: 124 Marine Drive, Service Road, Paarden Eiland, 7405



CNG and bioCNG

TotalEnergies show a commitment to the transport sector with substantial investments in making natural gas as widely available as its petroleum based products.

CNG stands for compressed natural gas, which is a natural gas fuel stored at high pressure. It has been compressed to 200-250 bar and thus reduced to less than 1% of its volume at standard atmospheric pressure. This makes it easier to store and to transport.

CNG fuel is particularly suitable for passenger cars, light commercial vehicles, light trucks and buses. It offers trucks a range of around 550km. CNG vehicles driving on biomethane emit significantly less particulate matter* and CO2** than conventional fossil fuels.

Production of Biomethane

The renewable and non-fossil variant of CNG is biomethane or bioCNG. Biomethane is produced by fermenting biomass into biogas, which is purified and converted into grid quality gas. The biomass can consist of various types of raw materials, or feedstock, such as straw or tree bark and branches, or organic materials, such as food waste, roadside grass, sewage sludge and animal manure.

Biomethane to bioCNG

The biomethane, which consists of the same molecule as natural gas, namely CH₄ or methane, is then injected into the gas grid. The natural gas is subsequently extracted from the grid and compressed by

means of a CNG installation to be used as transport fuel. Biomethane can be blended or used up to 100% depending on availability and customer requirements.

Growing Network of CNG stations

TotalEnergies strives to make alternative fuels that are cleaner and lower carbon available to as many users as possible. The acquisition of PitPoint in May 2017 has accelerated the growth of TotalEnergies' CNG network in Western Europe. Today, TotalEnergies operates more than 190 public CNG stations in the Netherlands, Germany, Belgium and France.

TotalEnergies' NGV Ambition

In line with its strategic ambitions for natural gas and renewable energy, TotalEnergies aims to expand its European network to 450 NGV (Natural Gas Vehicle), refueling stations - CNG as well as LNG - with more than 50% biomethane share by 2025; and thus become the market leader in the region.

Overseas, too, the number of NGV locations is growing. For example, in the Americas region, through TotalEnergies' participation in Clean Energy Fuels in the US which, in 2021, operates more than 565 (bio)NGV stations, including some 45 (bio)LNG sites. In Asia, TotalEnergies, through its joint venture with India's Adani Group, operates more

than 200 CNG stations today, with an overall regional target of 600 NGV stations across India and Pakistan by 2025.

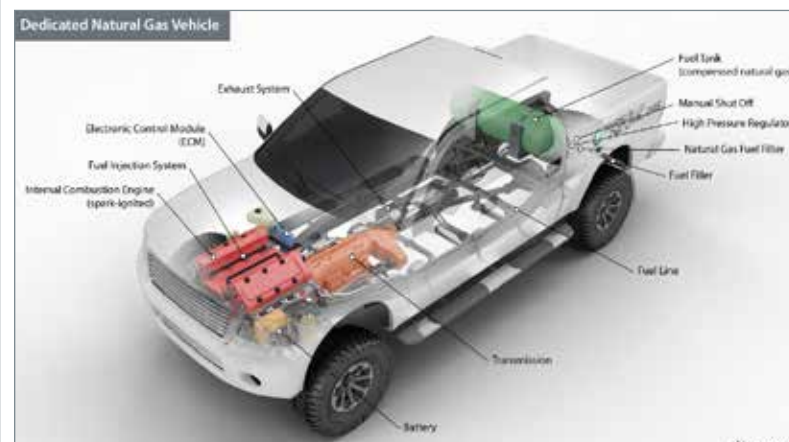
Product Benefits

Reduced vehicle emissions, such as local air pollutants* and, especially when biomethane is used, less greenhouse gases**.

Increasing selection of CNG vehicles available on the market, from passenger cars to heavy trucks. A CNG engine runs more quietly than a diesel engine, which is advantageous for city distribution at night.

* A study on air quality from the Sustainable Gas Institute (2019), 'Can natural gas reduce emissions from transport?', shows that NGV engines provide a NOx reduction of between 40%-60% (depending on the type of road) compared to diesel, by using a simple clean-up system. For particulate matter (PM), NGV engines ensure as much as 95% lower levels compared to diesel, thanks to a soot free combustion (with no need for a complex after-treatment).

** According to the NGVA Europe & Thinkstep study (2017) on the 'Greenhouse Gas Intensity of Natural Gas in Transport' (2017), a reduction in CO₂ emissions of up to 16% is achieved by driving on CNG compared to diesel for heavy-duty applications and calculated on a 'Well-to-Wheel' basis. Using biomethane increases this CO₂ reduction to as much as 80%.



How Do Natural Gas Vehicles Work?

Compressed natural gas (CNG) vehicles operate much like gasoline-powered vehicles with spark-ignited internal combustion engines. The engine functions the same way as a gasoline engine. Natural gas is stored in a fuel tank, or cylinder, typically at the back of the vehicle. The CNG fuel system transfers high-pressure gas from the fuel tank through the fuel lines, where a pressure regulator reduces the pressure to a level compatible with the engine fuel injection system. Finally, the fuel is introduced into the intake manifold or combustion chamber, where it is mixed with air and then compressed and ignited by a spark plug.

Complete Propulsion Solutions for a wide range of applications

**124 Marine Drive, Service Road,
Paarden Eiland, Cape Town,
South Africa**

www.seascapemarine.co.za

seascope_marine_services

+27 21 511 8201

info@seascapemarine.co.za

The biggest obstacle to sustainability is wishful thinking - Part 2

This is the second part of the article published in CBN August where Stefano Marani -Renergen CEO myth busts some oft repeated 'irrefutable' energy 'facts'.



Stefano Marani -Renergen CEO

IN this article I have argued that we need to find a more moderate approach to sustainability, and list several myths which prevail when it comes to the green economy and which obscure our path to preventing a sharp societal decline.

Here I pay closer attention to each of those myths, and the associated obstacles and risks.

Myth 1: We have sufficient resources to achieve "net zero".

In the last 150 000 years humans have, through mining, produced around 750 million tons (mt) of copper. According to the United States Geological Survey,¹ we have around 870 mt of copper reserves left. As it turns out, copper is quite rare as far as metals go, which is a pity because the only viable substitutes as an electrical conductor are silver and gold. In 2021 we mined 30.3 mt of copper, 1.3 mt of which was for green energies.

By 2030 Goldman Sachs estimates we will need 41.2 mt annually, 5.2 mt of which will be for green energies. At current mining levels (and mines don't get built overnight) we will have a deficit of 7.7 mt per annum and growing as the world's largest copper mine in Chile ramps down and very few new discoveries are being made. Bear in mind that this deficit

arises with an almost non-existent reduction in fossil-fuel consumption – transition completely and we run out of copper really soon. And then there is nickel ...

Myth 2: The cost of renewables will continue to go down.

It is widely believed that advances in technology and manufacturing were the cause of reduced cost of solar panels and wind turbines. In reality, interest rates dropped significantly, and energy prices fell dramatically (even reaching zero for oil at one stage) over the last decade. Take these two factors into account, and somewhere between 50 – 70% of the total cost reduction was from these two facts alone.

Solar panels (made from plastics and fossil fuels) rely on a key ingredient in the form of polysilicon. Polysilicon is what turns the sun's rays into electricity. An increase in coal prices in China by 100% lead to a 300% increase in polysilicon prices. You can't make solar panels without fossil fuels, this is just simply the truth of it, and the more expensive the fossil fuels are the more expensive panels will become.

Wind turbines suffer a similar fate in that the neodymium used in the magnets is mined using diesel equipment which has no prospect of switching to EV or hydrogen for the next decade at least. The

steel and cement costs are directly linked to the coal price, so this technology is also reliant on fossil fuels. Recent estimates by Goehring & Rozencajg² have solar power climbing almost 300% and wind by 33% in the next few years.

Making more wind turbines and solar panels isn't going to reduce their reliance on fossil fuels. In fact it will enhance the overall consumption of fossil fuels at a global level. To illustrate this point, according to data by the International Energy Agency, from 2010 to 2019 the total energy produced by renewables increased 29%, and fossil fuels increased by a corresponding 11%.

Myth 3: Wind turbines and solar have little to no climate impact.

I believe we can all agree Harvard University is a credible institution. They embarked on a study of the 57 636 wind turbines in the US in 2018,³ and the overall impact on the micro-climates once operational. The law of unintended consequences is sometimes not kind. The turbines have created "wind-shadows", reducing air flow which is inadvertently heating the affected area more than would be expected. This negatively impacts the wind pattern and reduced wind over time, reducing the turbines' output. Harvard's conclusion was as follows: "If your perspective is the next 10 years, wind power actually has – in some respects – more climate impact than coal or gas. If your perspective is the next thousand years, then wind power has enormously less impact than coal or gas."

The problem with this report is that it only factors the impact once the turbine is installed. An average 1.5MW turbine needs around 180 tons of steel, 9 tons of copper, 600 tons of concrete and 15 tons of carbon fibre. That has a carbon footprint of 913 tons of CO2 just for

the metals. While over 20 years this becomes a small component of the total emission of the turbine, the point is that none of this energy is carbon-free, just lower in carbon footprint with potential unintended consequences. The truth is that over 1 000 years we have no clue what we will do to weather patterns by removing significant amounts of wind energy from the system.

The elephant in the room remains the mass production of solar panels. These rely on a horrible little molecule called nitrogen trifluoride. It is highly toxic, has a greenhouse gas potential over 17 000 times worse than carbon dioxide ranking it second worst on the planet, and unlike methane or carbon dioxide which nature can deal with, is inorganic and therefore stays with us for close to 1 000 years. Since solar became popular, we have increased the levels of this gas by over 300%, and these levels continue to climb at astounding rates.

We cannot remove this poison, and it is accumulating fast. Either find a way to make panels without it, or ensure that when you buy a panel, you pay the premium and buy the really expensive one where you know the factory has made an effort to release as little of it into the atmosphere as possible. But then you need to understand your power isn't going to be cheaper than Eskom, even at 12pm in the afternoon.

Myth 4: Renewables are cheaper than current fossil fuels.

If renewables were

really cheaper than fossil fuels and Eskom, the mines would be falling over themselves to go off-grid immediately. That sector is arguably the most cut-throat in our country. They can install solar and wind whenever they feel like it, but their plans are only to begin installing in 2028 to 2035.

It isn't government red tape stopping them. It is the cold, hard laws of economics. Project the Eskom tariff increases for the next 15 years, assume reductions in the cost of battery storage over the next 5 years, and the discounted cash flow analysis shows that you break even if you begin installing in several years' time when Eskom's tariffs have increased substantially. It is that simple.

If you choose to however look at a drag-race shootout and compare 1kWh of solar to 1kWh of Eskom at 12pm in the afternoon, yes solar is about 15% cheaper. But a Mazda 323 will get around the Le Mans racetrack faster than a rocket powered drag-racer. If you want to cover the whole track, you need battery storage, and this is expensive and is only going to get more expensive with escalating energy and commodity costs.⁴

Myth 5: Battery energy density will achieve levels comparable to fossil fuels.

At present the best batteries hold 0.7% of the energy per kilogram that diesel can. The theoretical limit is 1.6%. The limit is a hard one and cannot be surpassed as it would break the laws of physics. So if your truck fills up with 400kg diesel (average

truck), you are going to need a VERY substantial battery to match, even when you factor in that diesel engines are only 35% as efficient as electric motors.⁵

Myth 6: Electric vehicles are going to change the course of the future and fossil fuel usage.

By 2040 it is estimated that there will be 140 million electric vehicles on the road. This will only represent 7% of the global fleet, thus we will still be at 93% of fossil-fuel consumption for road. This assumes we have enough copper to supply into the manufacturing process, and remember that this will not include trucks. My personal opinion is that EV cars will become the premium luxury cars of the future that everyone aspires to own, but the middle and lower income will continue to own cars with internal combustion engines.

Myth 7: Green Hydrogen is fossil-fuel free.

It is an indisputable fact that 100 units of energy put into an electrolyser will only produce 63-65 units of energy available as hydrogen. That then needs to be compressed or liquefied for transport, so this reduces to around 58-60 units of energy. Putting this hydrogen into a fuel cell typically only releases 40% of the hydrogen's chemical energy into electrical energy (the rest is heat), so our 60 drops to 24 units. 24% of the energy we obtained from the hydrogen made its way to somewhere useful. The 100 units came from a solar panel, which had we put it straight into the grid would have eliminated 263 units of coal

and given 100 units of electricity to charge an EV instead. On a like-for-like basis, to generate 100 units of electrical energy from hydrogen we need 416 units of solar energy, which could actually offset 1 094 units of coal.

What are we thinking?

Take into account that the solar panels need 1 unit of fossil fuels upfront to create 5 units of "clean energy" over 20 years, and then you take a quarter of that as useful energy from your hydrogen, and you have a ratio of 1 unit fossil fuel to create 1.25 units of electricity from hydrogen. You are almost better off just using the fossil fuel. And I haven't mentioned that widespread use of hydrogen would require a massive increase in the use of platinum, which is even more scarce than copper!

What is needed

Now that I have laid out the facts, which you are welcome to research as I did, you should draw your own conclusions. I am believer in the simple fact that our current lifestyle isn't sustainable. We need to regrow our forests. We need to change our way of farming. We need to stop over-fishing. We need to reduce our red meat intake to save our water. We need to find new ways to power our lifestyle. We have come a long way and made great strides, but everyone needs to be a little more moderate in their approach to whether we should be "green" or fossil. There is a balance.

1. <https://copperalliance.org/sustainable-copper/about-copper/cu-demand-long-term-availability/#:~:text=Global%20copper%20reserves%20are%20estimated,USGS%2C%202014%20%26%202017>
2. http://gorozen.com/research/commentaries/4Q2021_Commentary
3. <https://news.harvard.edu/gazette/story/2018/10/large-scale-wind-power-has-its-down-side/>
4. http://gorozen.com/research/commentaries/4Q2021_Commentary
5. <https://thebulletin.org/2009/01/the-limits-of-energy-storage-technology/>

A New Era in Angola

By NJ Ayuk, Executive Chairman, African Energy Chamber

THE joint venture between the Angolan businesses of UK oil major BP and Italian multinational Eni, finalized in early August, is big news in every sense.

Azule Energy is now Angola's largest independent equity

oil and gas producer and, according to our report, is expected to be the country's second-largest producer overall, behind only state-owned Sonangol. Our report projects that Azule will produce approximately 22% of Angola's oil and gas output through 2025, surpassing even such industry giants as Chevron and TotalEnergies.

How much product are we talking about?

Azule is projected to produce 250 000 net barrels of oil equivalent/day (boe/d) from Angola's upstream sector by 2027, according to BP and Eni. Not only that, but the company has BP's and Eni's stakes in 16 exploration licenses, suggesting a long-term presence in Angola.

Azule will have an important role to play in growing Angola's natural gas industry, too, as a participant in the New Gas Consortium (NGC). This joint venture was created by BP, Eni, Chevron affiliate Cabinda Gulf Oil Company Limited (CABGOC), TotalEnergies, and Sonangol in late 2019 to explore and produce gas in Angola and bolster economic growth there.

One of the consortium's initial projects will be the development of the Quiluma and Maboqueiro gas fields, Angola's first non-associated gas development project. The consortium partners announced a final investment decision on the fields earlier this summer. With first gas scheduled for 2026, the fields are expected to produce a combined

total of approximately 4 billion cubic meters (bcm) of gas a year at their peak. The project also will supply gas to the Angola LNG (liquefied natural gas) plant.

Azule Energy's ongoing activity will have a tremendous impact on Angola's people and businesses. The new joint venture's natural gas activities alone with help meet domestic needs, beginning

with new gas-to-power programmes that will help deliver reliable electricity to more Angolans. The gas also can be used as feedstock for petrochemical plants, leading to more economic growth and diversification, and it can help meet the international community's pressing need for natural gas, heightened since Russia invaded Ukraine.

New articulated dump truck

JOHN Deere has introduced the new 460E-II Articulated Dump Truck (ADT) featuring a redesigned wider dump body, new electrical and hydraulic systems, and new drive modes. The E-II Trucks combine the most popular features of the E-Series line with customer-driven performance and operation enhancements, resulting in a machine that is easier and more cost-effective to operate.

Built to Maximise Performance

A vital feature of this machine is the redesigned dump body, which is wider and has a lowered and levelled rail height to improve material retention and allow it to be easily loaded. Additionally, the bin rail features an angled top, helping to reduce material spillage while travelling. The 460E-II model is also available with a new ejector body solution. This solution allows operators to spread a load over a given area and can be used in areas with overhead powerline



concerns or where the risk of rollover is high due to steep grade unloading.

Improved Fuel Consumption

The three drive modes available on the 460E-II ADT help optimise the drivetrain, reduce inputs from the operator, and enable easy customisation. Normal mode for everyday operation

reduces fuel burn by up to 7% compared to existing models. By contrast, Eco mode, when conditions allow, conserves fuel by managing engine power delivery and optimising transmission response for those conditions, improving fuel consumption by up to 12% compared to Normal Mode. Traction mode optimises differential lock for maximum tractive effort in

soft and slippery ground conditions. The new wheel-speed sensors also provide a more accurate reading than the ground-speed radar to confirm the traction-boosting auto-differential lock engages when needed.

Designed For Durability

The John Deere 460E-II Articulated Dump Truck axles are designed for

heavy-duty and longer life. They are lubricated, filtered, and cooled to extend their service life, while the spring-applied, hydraulic-released park brake is also highly reliable. The inboard wet-disc brakes run cool, clean, and unexposed. The braked axles are each force cooled and filtered separately. The cooling oil is separate and not shared, ensuring that

cross-contamination is never possible. Combined with the strong transmission retarder, they help deliver consistent stops and maximum brake life.

Improved Reliability

The hose and wire routing on the ADT has been simplified to reduce rubbing and improve reliability, whilst the factory-installed auto lube further boosts uptime and reliability. The redesigned electrical and hydraulic systems maximise machine uptime with a 10-percent reduction of electric and hydraulic routings, further reducing leak points and improving reliability.

Safety First

The 460E-II ADT features a number of safety features that help keep operators out of harm's way, such as; remote park-brake release, rollover protection, ground-level service, and auto horn.

With rollover protection, operators can set limits for the rear-chassis level when unloading. If the limit is exceeded, the dump body will not raise, and an alert message will appear on the monitor.

Comfort is Key

This model's updated operator station includes features that promote increased productivity and all-round comfort. One of the most notable features is the single switch model, reducing the number of switches by 25% compared to previous models. The quiet, pressurised Deere-designed cab also features a new, easy-to-read monitor and rear-camera display, along with options such as premium heated/ventilated seat and automatic temperature control (ATC) system.

To learn more about the new 460E-II ADT and the full John Deere construction equipment line, visit www.deere.africa



Condition Monitoring is at the heart of machine reliability

WearCheck specialises in a range of sophisticated condition monitoring techniques which help to boost the availability and reliability of machinery, thereby helping our customers to operate more efficiently and save money on maintenance costs.

Machines speak, we listen, you save!

- + 27 31 700 5460
- support@wearcheck.co.za
- wearcheckafrica
- WearCheck
- www.wearcheck.co.za



Maintenance the key to efficient HVAC on mining machines



LACK of attention to maintenance on heating, ventilation and air conditioning (HVAC) systems on mobile mining equipment such as dump trucks, excavators, dozers and drill rigs can cost mines dearly. This is the view of Brenton Spies, managing director of HVAC specialist Booyco Engineering, a company which has been a leader in its field for more than three decades.

"An HVAC system that is malfunctioning can result in a multi-million rand mining vehicle being taken out of service, resulting in hours of downtime and possibly hundreds of thousands of rands of lost production," says Spies. "Modern health and safety laws in South Africa are very demanding and operators are entitled

to stop work if ambient temperatures in the cab are too high or, for that matter, too low."

Booyco Engineering has a track record of supplying and maintaining highly efficient HVAC systems for customers in the railways, defence and mining sectors. Its clients over the years have included Transnet, General Electric, Alstom, Bombardier and, in the mining sector, Seriti's New Vaal opencast coal mine. Booyco has supplied maintenance services continuously to New Vaal for more than two decades.

The company's HVAC systems are locally designed and manufactured and are specifically designed for Africa's rugged conditions. The units are assembled in Booyco Engineering's 3 000 m² Meadowdale premises

in Germiston. "We out-source most of the fabrication but all design is undertaken by Booyco Engineering's engineers and technicians at our premises using the latest software and specialised tools," says Spies.

According to Spies, the standard HVAC systems used on many off-road mining vehicles are unable to cope with the constant vibration, extreme temperatures and dust that are encountered in mining environments. "Our customised units are more expensive than these products but they are durable and can function for 20 years, or even longer, if maintained correctly," says Spies. "By contrast, the life of standard units can be very short – no more than two or three years. Buying them is false economy."

He points out that most 'off-the-shelf' HVAC systems are designed to cope with temperatures of around 35°C. "This is fine if your machines are working in Europe but totally inadequate for mining areas, such as the Northern Cape, where temperatures can soar into the 40s," he remarks. "Our HVAC systems are designed for ambient temperatures of up to 45°C."

He adds that Booyco

Engineering has such confidence in its HVAC systems that it offers a five-year warranty to customers, which he says is ground-breaking.

"We've been on many mines recently and what we've noticed is that very few of them are maintaining their HVAC systems," he observes.

"For the most part, they do not have any consistent maintenance programmes in place and they entrust their maintenance work to technicians who have no real understanding of HVAC and who certainly don't have any in-depth understanding of the refrigeration cycle. At best, they will assign the task to one of their mechanics or auto-electricians, who they might send on a one or two-day refrigeration course."

By contrast – Booyco Engineering's technicians have been thoroughly trained by the company in every aspect of HVAC maintenance and are deployed on or close to customer sites throughout South Africa.

Spies says that Booyco Engineering can provide these services under a range of maintenance offerings, either long or short term, and is happy to negotiate appropriate arrangements with customers.

Advertorial

25 000 garments each day from premier supplier

G. Fox is South Africa's premier supplier of personal protective equipment (PPE) and safety work wear. G. Fox now distributes our products throughout Southern Africa through our network of 12 branches and has built a reputation as the first point of call for all businesses and individuals who require a reliable and quality supplier for their industrial consumable requirements.

As a proud member of the Bidvest Group, G. Fox has grown to become a trusted supplier to over 12 000 South African companies.

G. Fox sources premium quality and value-for-money products, both in South Africa and globally. All G. Fox work wear is manufactured in our first-rate facility in Swaziland. The factory is company-owned and dedicated to manufacturing to G. Fox's stringent specifications and standards. All garments are made from the finest quality fabrics, sourced directly by our factory and are finished to the highest standards in the industry and are SABS approved.

The Swaziland factory has grown to over 1,200 sewing machines, producing over 25,000 garments a day, employing over 2,000 people. The consistent, dependable and reliable supply of work wear from the factory to the G. Fox branch network has proven to be a significant and meaningful value proposition to the G. Fox customer base. Our manufactured work

wear range includes

- Industrial Work Wear: Coveralls, Ladies Smocks, Dustcoats, Work shirts, Trousers, Jackets, Flame Retardant NFPA2112 certified products
- Corporate: Soft Shell Jackets, Lady's slacks, skirts, blouses, men's formal trousers, chinos, denim jeans
- Hospitality: Chef's jackets, trousers, aprons, skull caps
- Medical: Scrubs, Lady's smocks
- Thermal: Freezer jackets, Trousers and Coveralls

Types of Fabrics

- Industrial: primarily cottons and cotton twills ranging from 200gsm – 300gsm
- Automotive Paint Shops: anti-static lint free polyesters
- Pharmaceutical: lint free polyester
- Flame Environment: NFPA 2002 certified Guardex 100% cotton, Nomex, Tecasafe
- Corporate: cottons and poly cottons poplin fabrics ranging from 105gsm – 145gsm, mechanical stretch mini mat polyesters and poly viscose for slacks, trousers & skirts
- Thermal: Oxfords, coated oxfords, waterproof oxfords, thermos bond polyester wadding, taffeta linings
- Hospitality/Food:



Industrial laundry treated fabrics, blood & fat release agents included in cottons and poly cottons

Embroidery/Printing

Embroidery and printing facilities located on site also offers panel printing and embroidery prior to make up

Trims

Primary supplier of trims is YKK, they have a factory in Eswatini supplying, zips press studs, buttons, velcro, reflective tapes

In an ongoing process of improvement and development as South Africa's premier supplier of industrial consumable products, G. Fox continues to expand our product offering, service delivery, and branch network.

Advanced coarse particle flotation systems

WEIR Minerals and Eriez Flotation, specialized in flotation equipment, have announced a cooperative agreement to design and develop coarse particle flotation (CPF) systems.

Coarse particle flotation facilitates more efficient separation, while also reducing water and energy consumption and producing safer tailings.

"This cutting-edge technology is a step-change improvement over conventional flotation systems," Eric Bain Wasmund, Ph.D., Professional Engineer, Vice President of Eriez Global Flotation Business said.

"The cooperation allows both companies to better connect the Eriez equipment with the slurry classification and conveying expertise of Weir Minerals. As mining companies look to optimize their plant and processes while also reducing their carbon footprint, we'll see



Using a novel aeration system to disperse fine bubbles into a fluidized-bed environment, the HydroFloat® Separator significantly increases the selective recovery of coarse particles by applying flotation fundamentals to gravity separation.

CPF being more widely adopted," Ricardo Garib, Division President of Weir Minerals said.

"This agreement enhances Weir Minerals' all-of-mine capabilities.

From the pit to the processing plant, with leading brands such as Warman pumps, Cavex hydrocyclones, GEHO positive displacement pumps, Linatex rubber products and Enduron

HPGRs, Weir Minerals takes a holistic approach to plant and process optimization.

Using a novel aeration system to disperse fine bubbles into a fluidized-bed environment, the HydroFloat® Separator significantly increases the selective recovery of coarse particles by applying flotation fundamentals to gravity separation.

Eriez's products include the HydroFloat® Separator for coarse particle mineral concentration, which delivers the capacity of a density separator while maintaining the selectivity of a flotation device. Using a novel aeration system to disperse fine bubbles into a fluidized-bed environment, the HydroFloat® Separator significantly increases the selective recovery of coarse particles by applying flotation fundamentals to gravity separation.

South Africa's Premier Manufacturer & Supplier of PPE

Sixty years in the business and still going strong.
When it comes to a name you can trust for top quality clothing and safety gear plus a comprehensive range of cleaning chemicals, paper products and industrial supplies, G.Fox is your safest bet.

and a whole lot more!







G. Fox
Think Clean, Think Safe, Think Fox
www.gfox.co.za

SUNWARD to showcase a fully operational surface drill rig at Electra Mining Africa 2022



SUNWARD SWDR138S excavator drill rig.

A fully operational surface drill rig will be on show at the Sunward stand at this year's Electra Mining Africa 2022 show.

The SUNWARD SWDR138S excavator drill rig is widely used in hard rock and coal mining typically in blast hole drilling within the surface mining, construction, quarrying and infrastructure market segments.

Mounted on a 24 ton excavator crawler chassis, the SWDR138S excavator drill rig is equipped with 102mm drill rods for drilling holes of up to 165mm diameter holes down to 36m. Minimal hole set-up times are achieved owing to high mobility, a fast tramming speed and flexibility while high flushing capacity is delivered by a 650cfm, 24 bar Atlas Copco air compressor.

Drilling is a notoriously challenging envi-

ronment and next to efficiency and productivity, creating a safe working environment to avoid injury to operators is paramount. The machine is equipped with a fully automatic carousel for hands-free operation and safe drilling. A comprehensive CCTV and obstacle detection system assist the operator with situational awareness. The rig is also fitted with an automatic fire suppression system. The spacious, fully air-conditioned cab provides a safe, comfortable working environment for operators and the rig is fully ROPS (Roll Over Protective Structure) and TOPS (Tip-Over Protective Structure) compliant.

SUNWARD Equipment Group is a top 50 global construction equipment manufacturer producing over 11 000 excavators and drilling rigs per annum.

The African continent is familiar with this well-tested and globally respected brand with numerous machines operating in South Africa, Namibia, Zimbabwe and the DRC.

In addition to the excavator drill rig, SUNWARD South Africa also offers a full range of DTH (Down the Hole) and Top hammer surface drill rigs catering for all geologies and applications.

The SUNWARD team invites all Electra Mining visitors to their stand (P16 in Nasrec's lake area) for a meet and greet and to partake in the unique opportunity of starting up the SWDR138 excavator drill rig and enjoy a hands-on experience of what this world-class machine has to offer.

For more information visit www.sunwardsa.co.za

Jetting trailers assist with tailings dam maintenance

TAILINGS, the waste products from mining, can be liquid, solid or a slurry, and may contain toxic substances. To avoid these substances from contaminating water sources or polluting the environment, mines contain them in tailings dams and are required to maintain and monitor them to ensure they remain safe. When tailings dams fail, the consequences can be lethal.

"The way most tailings dams work is that a slurry of mining waste is piped into the dam, and the solids then settle to the bottom. The water is recycled to be used in the separation process again," explains Sebastian Werner, MD of Werner Pumps, leading manufacturer of high-pressure jetting equipment in South Africa. "Aside from ensuring that the dam walls are sound, it's also important to monitor drainage. If the drainage system gets blocked, it can pose major safety risks."

If the drainage system gets blocked, it causes flow restriction and can affect safety factors such as the degree of saturation in the dam, and phreatic



surface levels. Blockages can be caused by anything from algae build-up to mineral deposits.

"To avoid or deal with blockages, regular jet-rodding is recommended," says Werner. "This entails using high-pressure water jetting equipment to scour the walls of the drainage system to allow water to flow freely by unclogging the pipes. It can also assist in identifying damaged pipes."

Werner Pumps supplies trailer-mounted high-pressure jetting units, which can be used for cleaning domestic sewer lines, as well as water sandblasting. They range from 8 litres per minute to

500 litres per minute, with pressures from 50 Bar to 2 800 Bar and power units from 2.5kW to 500kW, while the ultra-high-pressure units (such as those used in the tailings cleaning applications) offer 1 000 Bar and are also suitable for applications such as rubber and scale removal.

Extras available include a Werner low-water inlet switch, high-pressure jetting hose (20m, 30m or 50m), a high-pressure gun with lance, nozzle holder and fan nozzle, and the Werner small hose reel for smaller diameter hoses, for cleaning of household lines.

"We initially designed the trailer

units for domestic applications and smaller sewerage clearing operators and municipalities who were looking for a more cost-effective option than investing in a truck unit, but we've found that because they are so easy to transport, they are much lighter and they can get into tight spaces, they are ideal for other niche applications," says Werner. "We have a customer who uses one of our trailers not only for tailings dam maintenance on the mines, but also for clearing out piping in the boreholes they drill too. The trailer-mounted unit continues to be one of our most versatile offerings."

Large-scale screening equipment



The Lokotrack ST4.10 features a large 6m x 1.5m screen box which is rated to handle up to 600tph.

LATEST from Pilot Crushtec International is Metso Outotec's Lokotrack® ST4.10™, the largest model in the Lokotrack® mobile screen range. With a nominal capacity up to 600 tons per hour (tph), it is ideally suited for high-capacity aggregate screening in a closed-circuit crushing process.

While static plants have always been preferred in high-volume aggregate applications, mobility and flexibility have become principal factors for aggregate producers, prompting the migration to mobile screens at several operations.

A major talking point is the plant's extensive 9m² screen area with three 6,060 mm x 1,520 mm screen decks producing up to four end products. The wide feed box with an 8m³ capacity and the 10m side conveyors with adjustable angles and speeds, enable the unit to be deployed as part of a

multi-stage crushing process in closed circuit with large scale crushing plants such as the Lokotrack LT120™ or LT300HP™.

The wide grizzly rock box also makes loading with a wheel loader easy when using the Lokotrack® ST4.10™ as a stand-alone unit in sand and gravel applications. Despite its large size and its 33t mass, the new mobile screen is fast and easy to set up. With its

19 650 mm (length) x 3 040 mm (width) x 3 560 mm (height) transport dimensions, it can be transported between sites as a single unit on a low bed truck.

The screen is equipped with a diverter chute that enables blending of products from different decks. Side tensioned top and middle decks make changing screening media quick and easy, thus maximising

uptime on site.

As all Lokotracks, the Lokotrack® ST4.10™ can be equipped with the optional Metso Outotec IC™ process control system, which offers a safe single-button start-up and the possibility to interlock the screen with other Metso equipment in a train.

The new mobile screen is powered by a 106kW CAT C4.4 106 engine.

Rosond finalises its 2022 bursary recipient scheme

DRILLING solutions technology provider Rosond of Midrand is in the process of finalising its 2022 bursary recipient scheme, reveals Employee Relations Officer Freddah Motloung. Commencing in 2020, the scheme aims to assist the dependents of Rosond employees as well as deserving students in host communities who need financial assistance to complete their studies. The 2021 recipients attended an induction session at Rosond to introduce them to the business and the industry.

Motloung explains that the focus is on subjects such as engineering, geology, IT, finance, and human resources – in short, all the skill sets that



Freddah Motloung.

are deployed throughout Rosond itself. Capital solutions company Modern Centric Holdings vets all applications and liaises with the tertiary institutions concerned. It also provides applicants with additional training in the areas of work readiness and general life skills.

"The aim is to offer support to students to complete their studies

successfully to improve their chances of being gainfully employed in the mining industry," says Motloung. Apart from providing a pipeline of future skilled employees for the industry in general, these candidates will be considered for any future vacancies at Rosond itself.

Rosond has a Transformation Committee that meets on a regular basis to evaluate all community social responsibility projects. "Our priority is to focus on our employees and the host communities in which we operate," stresses Motloung. She reveals that a future development of the bursary recipient scheme is to launch an internship programme at the company itself.

The different applications for industrial coatings



Credit: Sika Group.

THERE are many types of industrial coatings on the market. Each of these coatings has their unique properties that make them useful for different applications. Read more about the different applications for industrial coatings below:

Epoxy coatings

Epoxy coatings are not just epoxy. They consist of an epoxy base, and either one or two additional industrial coating products such as a zinc-rich coating or polyurethane coating. The combination of coatings makes for different final outcomes that are suited to different environments.

Polyurethane coatings

Polyurethane coatings are industrial coatings that are often used to coat other coatings. This coating acts as a glossy finish that is scratch resistant. It is a great coating to use for outdoor applications as it is not prone to UV or weather damage. This coating is also used in underwater applications due to its resistance to corrosion.

Zinc-rich coatings

These coatings are durable and corrosion resistant, with galvanic

properties that act as a form of protection. The properties of Zinc-rich coatings make them the ideal choice for coating steel. There are two options for these coatings: organic or inorganic. Inorganic zinc-rich coatings are the usual choice for steel applications.

Acrylic coatings

Industrial coatings such as acrylic coatings are the perfect option as a primer for other coatings. An acrylic coating promotes the adhesion of future coatings. They are also very useful in preventing the breakdown of a product due to corrosion because its additives do not include many surfactants and other products.

Alkyd coatings

Alkyd coatings are the all-rounders of the industrial coating world. These coatings can be used for applications indoor, outdoor, below ground level and underwater. These industrial coatings do take longer but they are the ideal choice due to their environmental diversity.

Information supplied by SA Corrosion Control - <http://sacorrosion.co.za/>

Advertorial

Grinding Techniques – YOUR Industry Partner

GRINDING Techniques has been a solution-driven manufacturer of specialised abrasive products since 1981. With an extensive range of high-quality cut-off and grinding discs, vitrified and resin bonded grinding wheels, specialised industrial diamond tools and a wide range of surface finishing products, we are able to provide the perfect product solution for your application with optimum balance between cost and performance.

We became part of the global TYROLIT Group in 2014 – known as one of the world's leading manufacturers of grinding and dressing tools and a system provider for the construction industry based in Austria. With more than 100 years of manufacturing experience, we are willing and able to conduct trials, assist with application optimisation, and work in partnership with our customers achieving a tailor-made solution for all job requirements.

With our expertise focused on three key areas, Metal industries, Industrial trade and Quartz industries, we offer a complete package focused on customer service and satisfaction. All our abrasive products are manufactured in compliance to the highest international standards (ISO, EN and OSA) with the aim of producing maximum outputs at affordable input costs.

Whatever your industry, choosing an abrasive partner has never been easier.



Our ANDOR range consists of specialised precision and rough grinding abrasives that are suitable to a range of grinding applications within the Precision and Foundry Industries. These wheels are all manufactured with specialised bonding properties and proven grain combinations that allow for excellent form holding, cool grinding and high stock removal.

The Superflex range carries a variety of cutting-and-grinding abrasives that have been tried and tested for over 40 years. Produced locally at our Head Office in Chamdor, Krugersdorp, these abrasives are manufactured with only the best raw materials to ensure optimum performance upon application.

The latest addition to our range includes Non-Woven Abrasives, composed of abrasive grains that are fused to a three-dimensional support of nylon fibres. Uniform distribution of the abrasives combined with the softness

of the material ensures a constant and consistent finish throughout the working process and product's lifetime. Other product benefits include high ventilation to avoid overheating of the work piece surface, high flexibility and adaptability to the work piece with lower noise levels and resistance to clogging.

Non-Woven Abra-

length as to avoid wastage. Both mentioned variances are available in Medium, Fine, Very Fine and GP Green derivatives.

Grinding Techniques also offers an extensive range of Convolute and Unitized Wheels in a number of different densities, grit types and grades, all manufactured with the latest technology to provide

“The latest addition to our range includes Non-Woven Abrasives, composed of abrasive grains that are fused to a three-dimensional support of nylon fibres.”

sives are effective on multi materials e.g. stainless steel, aluminium, ferrous metals and their alloys, cast iron, titanium, plastic, varnish and plasters, and available in a variety of derivatives.

Pre-cut sheets, also known as hand pads are ideal for manual use or applications with orbital sanders. The same Non-Woven material is also available in roll form that can be cut to the desired

the best finishing combined with high tear resistance and product longevity. The main applications for these products are deburring, blending and finishing of a variety of materials such as all kinds of metals, plastic and composite materials.

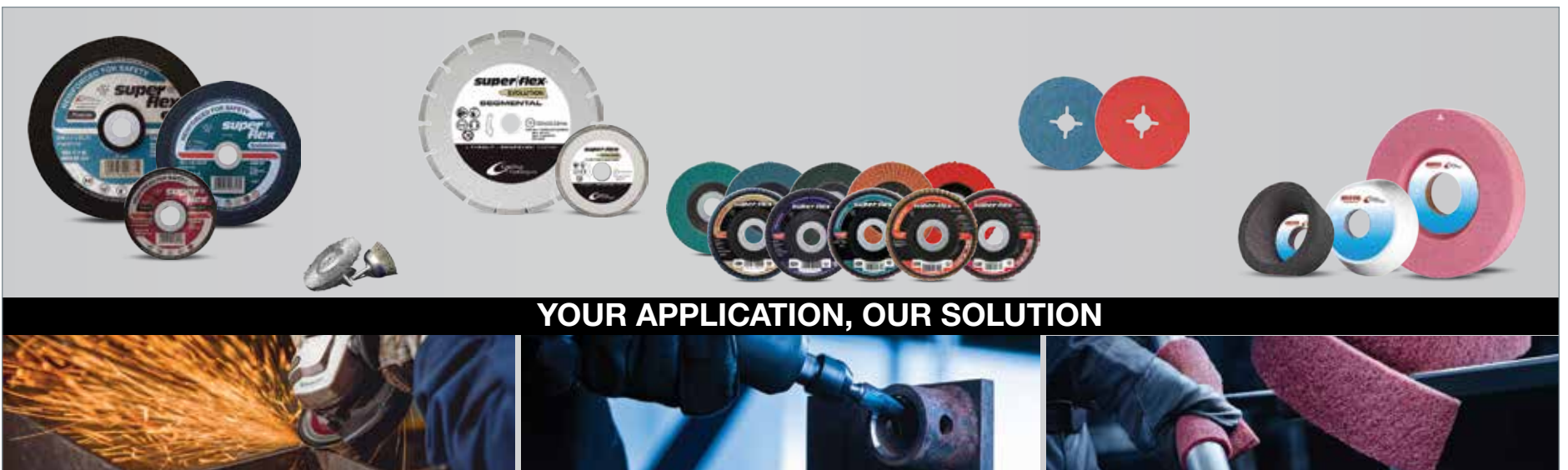
Unitized and Convolute wheels are similar types of products, but with important differences. Unitized wheels tend to be smaller in diameter, usually

150mm or less, making them ideal for use on portable power tools or for working on intricate profiles and shapes. Convolute wheels, being larger in diameter, usually 150mm or over, are ideal for stationary or robotic machines.

Tyrolit Rough Cleaning (Strip It) wheels are ideal for cleaning welds, removing corrosion, rust, scale and paints without excessive stock removal of the workpiece leaving a clean manageable surface to work on. The open structure of our Rough Cleaning wheels avoids clogging and makes them ideal for numerous applications. The Strip-It material is applied to a stiff fibre backing thus allowing it to be used on angle grinders. Our surface finishing range also include Felt Flap Discs with a fibreglass backing for mirror polishing to be used in conjunction with abrasive polishing pastes on variable speed angle grinders.

Our extensive range of abrasives provide application solutions to almost any cutting-and-grinding application from stock removal to creating the perfect finish. Our Business Development team is constantly developing and innovating our product range, to ensure a partnership with Grinding Techniques will take your business to the next level with increased productivity and profit.

For more info, contact info@grindtech.com | www.grindtech.com | +27 11 271 6400



YOUR APPLICATION, OUR SOLUTION

How Naval Aviation is solving its billion-dollar corrosion problem



A sailor inspects corrosion on the main rotor head of the MH-60S Sea Hawk helicopter.

THE Naval Air Warfare Center Aircraft Division (NAWCAD) recently patented a suite of corrosion mitigation products aimed at solving naval aviation's billion-dollar corrosion problem.

Chemists from NAWCAD developed Navguard, a family of aircraft cleaning, coating, and lubricant products to prevent rust and mildew on aircraft and their components – a problem that cost the US Navy over \$2 billion for the F/A-18C-G fleet alone from 2017-2020.

"Corrosion is almost like a cancer," said

NAWCAD chemist, Dr. El Sayed Arafat. "If nothing is done to stop it, it keeps going until it's too late to fix – Navguard improves readiness for the Navy and the rest of the Department of Defence".

Navguard is a first-of-its-kind corrosion inhibitor for the DOD. It has a longer shelf life, is easier to apply, and lasts longer than existing corrosion prevention products on the market. It is also safer for the environment. Navguard is in service with squadrons across the fleet today.

NAWCAD has been leading the corrosion campaign since the Navy identified corrosion as the single greatest systemic degrader across the fleet. The command, working with other system commands, has implemented a number of additional systemic mitigation initiatives to address the problem, including establishing a corrosion monitoring process across the DOD's fleet of aircraft, and instituting Navy-wide training to improve aircraft maintainers' approach to corrosion mitigation.

Strong demand for new a.b.e. concrete repair system

A new concrete repair system, comprising two a.b.e.® Construction Chemicals products, is providing excellent results and is increasingly being specified in various parts of South Africa.

a.b.e.®'s dura.rep EC, a three-component epoxy cement mortar with selected fine aggregates, is overcoated with a.b.e.® cote SF 217, a two-component solvent-free Novolac epoxy resin.

The combination of dura.rep EC and a.b.e.® cote SF 217 was selected for the repair and protection of the return activated sludge (RAS) pump station of the Sandfontein sewer works in Cape Town, completed by the main contractor, Hiload Inyanga Construction. A total of 120 kits of 21kg dura.rep EC was needed for this project.

Brett Papayanni, a.b.e. General Construction Sales Manager in Cape Town, who handled the two Western Cape projects on behalf of a.b.e.®, says trowel-applied dura.rep EC provides exceptional non-slump consistency for the smoothing of irregular surfaces and blow holes on concrete and masonry.

"dura.rep EC is ideal for re-profiling irreg-

ular surfaces, pore filling, and sealing of blow holes and can be applied to protect vertical and horizontal surfaces between 0.5 and 4 mm thick. It is chemical-resistant and suitable for new and refurbishment applications in aggressive chemical environments.

"Furthermore, the solvent-free product is impervious to liquids and can be applied to damp surfaces. It quickly develops placeable consistency and so provides a fast turn-around time. With excellent adhesion, dura.rep EC remains cohesive and does not sag," Papayanni explains.

The new a.b.e.® concrete repair and protection system calls for dura.rep EC to be overcoated with a.b.e.® cote SF 217, a clear resin system used for sealing, laminating, screening, and grouting applications. a.b.e.® cote SF 217 offers high chemical resistance not possible with standard epoxies. It can be used as a laminating resin, for high chemical-resistance screeding, chemical tile grouting, and sealing porous elements such as concrete and wood.

"a.b.e.® concrete repair products have for decades been used



Sandfontein before repairs.



Sandfontein after repairs.

to repair and effectively maintain important South African building and infrastructural facilities. The new dura.rep EC and a.b.e.® cote SF 217 system illus-

trate a.b.e.®'s commitment to develop and introduce the widest possible choice of solutions for diverse repair and maintenance projects," Papayanni adds.

Sulphuric acid building corrosion mitigation and lining

CORROCOAT South Africa report an interesting case study from its USA partners when asked to perform a corrosion assessment for a client on a 2 year old, four storey sulphuric acid building.

The building houses a

sulphuric acid generator on a petrochemical plant. Due to incorrect material selection, the process piping leaked acid throughout the building. This caused significant deterioration to the galvanized structure and concrete.

The concrete was previ-

ously lined with a competitor's concrete coating designed for short-term exposure in secondary containments. Beneath the leaking areas and around the concrete were pitted to depths of up to 100mm deep.

Shortly after reviewing

Corrocoat USA's corrosion assessment report, the client hired the team to supply and apply its Plasmet AR3 lining system. The lining system would refurbish the surface and protect against continual immersion. Some work was

completed using precision fiberglass sheets. This took place whilst the building was running, and then applied directly at a later stage to the prepared concrete. Throughout this stage of the project, the client addressed the root causes of their corrosion problems.

The surface was prepared using a wet abrasive blast unit, combined with utilisation of a salt remover. This was followed by a high pH cleaning agent to alkalize the surface. The concrete pH was then tested to ensure compliance to Corrocoat USA's own standards. Plasmet ECP (Epoxy Concrete Primer) was applied at 152 – 254 microns wet film thickness (WFT). Plasmet ECP penetrates into the concrete protecting subsequent coats from latent moisture, while fortifying the concrete at the surface.

Prior to installation of the new pumps in the building, the 10m x 0.6m x 0.6m high pump bases were poured using Corrocoat's Epoxy Polymer

Concrete (EPC). The EPC cures to provide a 1 380 bar compression strength and 124 bar tensile strength. It can be coated the following day, saving time while increasing reliability.

Pits on the surface were filled with Corrocoat Zip E Screed, a glass flake reinforced epoxy coating enhanced with a proprietary blend of fillers. This allows for resurfacing to direct liquids towards the sump – an important aspect of the customer's engineering team.

Once the screed was sufficiently hardened, Plasmet AR3 was applied at 1 200 - 1 500 microns. The coating was applied in two to three coats, mixing in an aggregate for non-skid in the high traffic areas. As we have seen in many other applications, the Plasmet AR3 is unaffected in the presence of all concentrations of Sulphuric Acid – it was the ideal solution for this project.

At one stage of the project, the team had to leave the site for several weeks. This was whilst

the Corrocoat Zip E Screed was down in an area without the topcoat. During their absence, there were repeated releases of the 40% sulphuric acid onto the Zip E Screed and the coating held up well. It was easily swept blasted and overcoated after being submerged for days.

On the galvanized steel, the team prepared the surface using a mixture of pressure washing with their 350 bar, 17 l/min pressure washer. This was in conjunction with the power tools, to prepare the portions of steel that were showing signs of corrosion. They primed with Plasmet ZF and the nuts and bolts were stripe coated using Corrofill E. The structure was then coated using the AR3, applied at 812 – 1 000 micron.

For more information contact Corrocoat (Cape Town) Tel: +27 21 945-2416 Email: cape-town@corrocoat.co.za Website: www.corrocoat.co.za

BLASTRITE® PLATINUM GRIT

THE WORLD'S BEST MINERAL SLAG ABRASIVE AND HERE'S WHY!

STANDARDS ACHIEVED:

- ✓ SSPC-AB1 Certified
- ✓ Asbestos Free Certification
- ✓ Passed LC 50 Standard - chemically safe and will not harm aquatic life
- ✓ CARB (California Air Resources Board) Certification - the most vigorous air emission standard in the world
- ✓ The first, and to date, the only abrasive media that met the USA's new Beryllium permissible exposure limits

What does SSPC - AB 1, Class A, Type II Certification mean?

BLASTRITE® PLATINUM GRIT IS GUARANTEED TO:

- ✓ Have no oil in product
- ✓ Contain less than 1% crystalline silica
- ✓ Have hardness above 6 mohs
- ✓ Have the correct particle size distribution
- ✓ Have less than 0.2% moisture content
- ✓ Have maximum soluble salts levels below 25mS/m
- ✓ Have water-soluble chloride levels below 0.0025%

TRACKRITE
STEEL GRIT
STEEL SHOT
GLASS GRIT
GLASS BEADS
SINTERBLAST
ALUMINIUM OXIDE
ROADMARKING BEADS
MICROBLAST® GARNET

BLASTRITE
SURFACE PREPARATION INNOVATION

CONTACT US:
08600 BLAST (25278)
SALES@BLASTRITE.COM
KZN - CAPE - GAUTENG

Minimizing downtime in mining operations



MACHINE downtime has a major impact on profit and productivity in any mining operation. It is critical that mining companies have access to reliable heavy equipment and machinery 24/7 to achieve their objectives. Described as a duration the machine cannot work when needed, machine downtime has negative ripple effects for any industry.

There are numerous factors which contribute to heavy equipment such as mining shovels breaking down. Poor maintenance or mechanical failure are top of the list, leading to a significant reduction in productivity. To curb downtime and ensure operations run smoothly and profitably, it is imperative that operators consider the following:

Higher operating weight and bucket

A mining shovel with higher operating weight results in better stability and durability. Furthermore, bigger bucket capacity is key in improving productivity in shot rock. A bigger bucket capacity has a direct impact on the number of passes per truck. Examples of such equipment include the newly improved Cat® 6015 hydraulic mining shovel. The shovel's higher power output makes it the fastest machine in its size class. Combining the bigger bucket and higher engine power output makes the Cat® 6015 more productive in its size class when compared to its competitors.

Optimised hydraulics

The Caterpillar hydraulic oil cooling system is independent of engine cooling and includes a hydraulically driven variable speed fan, providing

cooling on demand to maintain optimum hydraulic fluid temperature and maximize fuel economy. This system helps protect and extend the life of hydraulic components.

Realize faster boom movements and cycle times with boom lowering float valves. The boom float valve reduces demand from hydraulic pumps by using gravity to lower the boom thus increasing efficiency and enables pumps to support other functions simultaneously. This technology reduces demand from the engine and thus improving fuel efficiency.

Data to enable pro-activity

The Cat® 6015 allows

“There are numerous factors which contribute to heavy equipment such as mining shovels breaking down.”

miners to connect to MineStar™ with Product Link Elite, which comes standard with the machine. The use of Terrain enables precision management of loading operations to increase productivity.

Miners benefit from working with heavy equipment which offer analytical capabilities. Equipment needs to have sensors that empower the operator with data and information to be proactive. Data about the health of the machine, monitoring its performance and the ability to diagnose any issues or possible setbacks.

Automatic lube systems aid waste collection



SKF/Lincoln progressive lubrication system with P203 & KFGS1 pumps fitted to refuse compactor trucks.

THE success of an automatic lubrication system installed by SKF/Lincoln on two refuse compactor trucks resulted in increased uptime, machine availability and personnel safety, urging the satisfied customers to call for the same lube solution on three more trucks.

According to SKF/Lincoln's Application & Export Sales Engineer, Donatien Makopo, this was a new project for SKF/Lincoln. “We are extremely proud of the fact that our first compactor refuse truck lubrication installation impressed not one but two customers, a renowned truck manufacturer as well as a prominent crane builder.”

Makopo explains that the customers' initial practice to manually lubricate all grease points on the refuse compactors caused two main problems. “In addition to some points being overlooked as

they were covered in dirt, over-greasing was causing breakdowns and subsequent costly downtime. Over-greasing also led to unnecessary grease waste which added to the customer's costs. Already familiar with the brand due to lubrication installations having been done previously by a SKF's Authorised Distributor in Cape Town, the customer approached us to assist them with an automated lubrication solution.”

“We recommended the SKF/Lincoln progressive lubrication system with P203 & KFGS1 pumps as the best solution for our customers.”

The new generation P203 Quicklube pump can lubricate up to 250 lube points and is the answer for small to mid-sized machines and systems. The pump is equipped with numerous product advantages including weather-resistant

pump housing material not susceptible to UV rays, a larger filling port for easy filling of the reservoir and a strong “Polar” stirring paddle that ensures good lubricant mixing, even at temperatures of up to -40° C. Moreover, the pump is IP6K9K protected against damage and moisture.

The proven SSV progressive lubricant metering device in solid block construction is easy to monitor and delivers a high operating pressure ensuring optimum reliability even at temperatures below freezing. Featuring a maximum operating pressure of 350 bar, these piston metering devices reliably divide the incoming lubricant in predetermined individual quantities. As the devices are not fitted with fault-prone rubber seals, they can be used with high back-pressures, making them ideally suited to a wide range of temperatures.

SKF/Lincoln received the first order to fit automatic lube systems on two refuse compactor trucks on 12 May 2022. Despite a few delays on the customer's side, both trucks were completed on 27 May 2022. The project was a joint venture between the SKF/Lincoln team in Johannesburg who completed the installations at the customer's premises. The trucks were transported to KwaZulu-Natal for final commissioning by the local SKF/Lincoln team and then delivered to the Durban customer.

Due to the success of the first project, the customers placed a repeat order on 14 June 2022 for the fitment of three more trucks. We again faced some delays from the customer's side but we still managed to successfully complete installation and commissioning of all three trucks within six weeks,” concludes Makopo.



BOMAG
FAYAT GROUP



BULL



LIEBHERR

EQUIPMENT THAT DOES IT ALL

GROUND-BREAKING | EXCAVATING | COMPACTING | CRUSHING | SCREENING | LIFTING | HANDLING



McCloskey
INTERNATIONAL



KEMACH
FORKLIFTS

Contact us:
sales@kemach.co.za
 Head Office: 011 826 6710
www.kemach.co.za
 f t i y d in

New Cape Town premises for DAF

AS part of its quest to ensure maximum uptime for DAF customers operating across all major transport corridors in South Africa, Babcock is moving DAF's Cape Town dealership to a new, spacious facility. Strategically located on the N1, the new facility will open its doors on the 5th of September.

Business Development Manager Rhenier Kapp says the location of services is critical for the convenience of Babcock's transport customers. "Situated in the Kraaifontein Industrial area, the new facility is conveniently sited right off

the N1, enabling customers quick and easy access in and out of the premises," he says.

The service workshop is located in the middle of the property, thus providing ample space to accommodate a truck and its trailer. In addition, the workshop is equipped with two 26m long service pits, which allow for simultaneous servicing of both the truck and trailer.

"Eliminating the need to unhook the trailer from the truck maximises uptime for our customers. As part of our efforts to give a complete service solution to the customer, we will be adding an experienced trailer

expert to our workshop team. Instead of having to send the trailer to a different service provider, DAF customers now have the convenience of servicing their trucks and trailers under one roof," adds Kapp.

The new branch will also add three workshop staff, a parts administrator and a service coordinator.

In conclusion, Kapp says maximising customer uptime – which is paramount in truck operations – is the major goal of the new facility. Each minute the truck is off the road, he says, means that customers are not earning money.

Mecalac completes zero-emission urban portfolio

By Saul Wordsworth deputy editor of the iVT brand

THE unveiling of Mecalac's brand new electric dumper and swing loader at this year's Bauma will complete the company's trio of medium-sized urban electric machines. Its 11-ton e12 excavator, which was debuted back in 2018, are joined by the 1000-litre es1000 swing loader and the ed6, its new six-ton dumper. This trio of urban warriors are complimented by on-site high power battery charging solution M-Power to aid intelligent, clean and silent construction sites.

The current market offer of mini electric machines cannot carry out urban construction jobs on their own. Mecalac's challenge was therefore to be the first manufacturer to develop a full range of

medium-sized products.

The main reason explaining the absence of medium-sized electric machines on the market is the optimisation power management to ensure sufficient autonomy. To overcome this challenge, Mecalac has made a technological breakthrough on the hydraulic distribution system, as well as on the energy management of auxiliary systems (eg: heating and air conditioning) to drastically reduce energy consumption without compromising autonomy and performance.

The way of driving that operators have adopted for decades behind the steering wheels of combustion engine machines is not always compatible with optimising battery performance. For example, when the throttle pedal is pressed, all the power of an electric machine is instantly

neous, unlike combustion engine machines. Mecalac has therefore configured the human machine interface so that it reacts in an optimal way to preserve autonomy and guarantee a coherent behaviour.

M-Power is a mobile high power supply solution. With its 300kWh storage capacity, it replaces "traditional" diesel generators by providing a battery charging solution anywhere. Mecalac's electric ecosystem is a game-changer that enables a drastic reduction in CO2 emissions on construction sites. For example, three Mecalac zero-emission machines working together on the same urban worksite save an average of 64 tons of CO2 that their combustion engine equivalents would have emitted over a year

Reprinted from <https://www.iVTinternational.com/news/construction>



Wacker Neuson appointed Cangini Benne dealer

WACKER Neuson South Africa (Pty) Ltd., a subsidiary of the global Wacker Neuson Group, has been appointed as the authorised dealer for the Italian machine attachment specialist, Cangini Benne.

Wacker Neuson customers can now benefit from faster, local access to Cangini products, product expertise, and after-market care.

Cangini Benne was established in Italy in the 1980s and the brand has been present in Southern Africa for approximately ten years. The company is globally renowned for the design and production of one of the widest attachment portfolios on the market which include standard and hydraulic work tools for excavators, skid-steer loaders, wheel loaders, and telehandlers.

"We are extremely excited to be a distributor for Cangini Benne," says Dennis Vietze, Managing Director for Wacker Neuson Sub-Saharan Africa. "Both companies are rated high on product quality and service excellence by customers worldwide. Collaboration with like-minded partners is an important part of our business strategy in a bid to provide turnkey solutions to our customers."



Wacker Neuson excavator with a Cangini branch cutter bar.

Moreover, through this partnership, we are able to offer our customers an impressively wide range of attachments, transforming our machines into fully-fledged tool carriers for handling multiple agricultural and construction applications. We are now ideally positioned to provide end-to-end customer solutions," stresses Dennis who lauds the variety, quality, robustness, reliability, and versatility of the Cangini product range.

"Our association developed slowly but steadily over the years," says Antonio Cannaò, International Sales Director for Cangini

Benne. "In addition to the geographical distance between the two companies, the recent Covid pandemic, with its related lockdowns and travel restrictions, further impeded our plans. However, both parties acknowledged that we could continue to count on each other's full commitment. Our collaboration finally took huge strides forward this year as we officially welcome Wacker Neuson to the Cangini Benne dealership stable."

The agreement gives Wacker Neuson access to the full Cangini range, with Cangini excavator buckets, hydraulic brooms,

and mulchers being particularly popular with Wacker Neuson customers because of their high quality. Antonio adds that they see great potential in the Southern African region for hydraulic tools for both excavators and front-mounted machines such as tilting hitches, selector grabs, mulchers, concrete mixer buckets, different types of sweepers and sweeper buckets as well as a unique laser-guided dozer blade. He points out that these will be the perfect match for Wacker Neuson's skid steer loaders and wheel loaders for very accurate and fast grading

New all-electric heavy lift ship crane



The LS 800 E has all-electric drives and offers a working radius of 39 metres.

LIEBHERR's heavy lift crane series is being expanded with an 800 ton crane. The aim with the new crane is to establish itself in the growth market of ever larger wind industry components. The crane is fully electrically powered and thus enables a reduction of CO2 emissions on the ship side in scenarios typical for heavy lift vessels.

The growth of wind turbines is leading to increasingly heavy individual component weights.

In addition, the handling of large components requires a longer outreach of the cranes used than is often the case in the market. The supply of heavy lift vessels with cranes offering a maximum lifting capacity of 800 tons is lower than the expected future demand. Liebherr therefore sees a growth market in this crane segment and in the matching new shipbuilding. The Liebherr ship crane enters a new segment and expands the product portfolio of heavy lift ship

cranes. "The new cranes follow on from a long tradition and decades of experience in building ship cranes. The first ship crane was delivered by Liebherr in 1958. The push into the 800 tons size segment does not represent new territory – Liebherr has already supplied onshore and offshore cranes in the 3 000-5 000 tons category," comments Gregor Levold, Sales Director for Liebherr Offshore, Ship and Port Cranes.

In addition to the much larger dimensions

of the crane, the LS 800 E is particularly impressive due to its all-electric drive concept. All sections of the crane are electrically driven. As a result, the machine achieves higher energy efficiency and thus significantly reduces the ship's CO2 emissions.

Tradition meets future

The new "Master V" control unit offers the highest computing power. The accompanying faster data processing

enables the integration of future assistance systems and semi-automated process applications. All heavy-lift cranes are characterised by the Litronic control system developed in-house. It combines speed and precision and thus ensures a safe and at the same time efficient loading process. Continuous further development means that the latest features and applications will continue to be available to Liebherr ship cranes in the future.

Serving Land and Life.

Interwaste and Séché Environnement, a recognised specialist in the recovery and treatment of hazardous and complex waste, have joined forces to bring innovative waste treatment solutions to the African market.

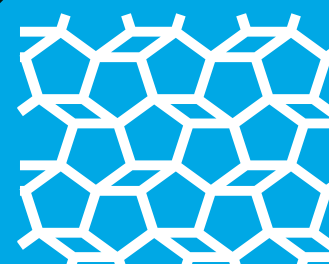
The combined expertise of the two businesses, built on social and environmental values, not only brings a strong focus on the circular economy, compliance to stringent environmental standards and the investment in leading technology, but also a focus on creating opportunities to deliver economic, social and environmental value to all.

Partnering for the Planet.

INTERWASTE

A proud  Séché environnement company

interwaste.co.za





Scania partners with The Shoprite Group to launch first fuel-efficient Euro 5 trucks

Continued from P1

Shoprite’s transport system is extensive with a requirement for optimal performance in order for The Group to maximise cost effi-

ciencies. “Shoprite values data as much as we do,” says Bergvall. “Data has driven our sustainability journey and allowed us to track,

record and analyse our customers’ operational information to ensure we are able to constantly support both their sustainability

and financial goals.” This data is also used to measure Scania’s performance against science-based carbon reduction targets. Scania was the first major heavy commercial manufacturer to commit to the United Nations Sustainable Development Goals and to achieving the Paris agreement targets of limiting global warming to 1.5 C above pre-industrial levels.

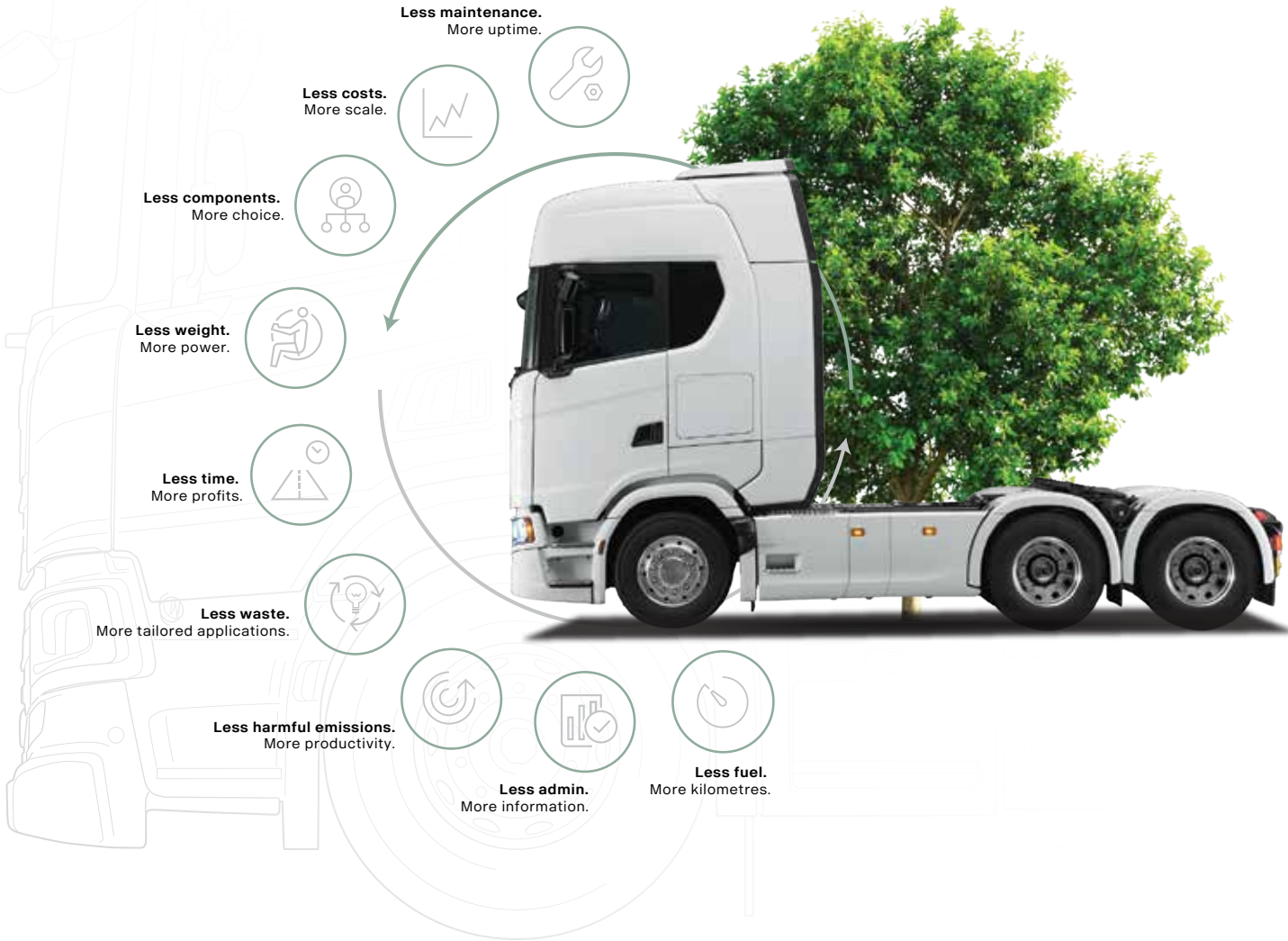
“Flexible Maintenance Plans that will maintain peak performance across the Shoprite Fleet.”

“The good thing about these targets is that they draw a line in the sand for us, creating a clear route to reducing greenhouse gas emissions,” explains Bergvall. “This commitment includes emissions from our customers’ vehicles when in use, so to achieve our sustainability goals, we need to partner with like-minded companies, like Shoprite, who share our desire to create a better future for those who come after us.”

The Shoprite partnership will see Scania continuing to equip drivers with extensive driver training while tailoring Flexible Maintenance Plans that will maintain peak performance across the Shoprite Fleet. On-site servicing by Scania technicians will aid preventative maintenance while decreasing downtime. “When completing a sale, it is one of our core principles to ensure that the relationship is long-term with meaningful outcomes for our customers,” he says.

To date, Scania has conducted 45 one-month tests using their Euro 5 vehicles with several different clients across varied applications. In all cases, the Euro 5 unit has been more fuel efficient than the customer’s existing trucks. “There are no compromises for our customers when adopting our sustainable transport solutions,” says Bergvall. “Our partnership with Shoprite is pioneering the way to a more sustainable future that will yield great benefits, not only to the transport industry but also to our economy, people and the environment.”

LEADING THE SHIFT



POWERING A NEW ERA OF SUSTAINABLE TRANSPORT

For decades, we’ve set new standards for the transport industry. Finding new solutions that eliminate waste, while maximizing the use of our advanced technology. It’s allowed us to lead the way with industry leading fuel efficiencies that benchmark new levels of customer profitability while eliminating harmful emissions. By integrating sustainability into everything we do, we’ve found ways to use less to deliver so much more.

Because sustainable solutions should be just that. Sustainable.

Make the shift at www.scania.com/za



SA businesses to prioritise sustainability to remain competitive

BUSINESSES in South Africa are fairly familiar with carbon tax by now, and as these taxes increase, it's becoming more important for industrial operations to find methods of cutting carbon emissions. However, the emerging trend that companies should be taking more seriously is their carbon impact, a vital factor for all businesses to include into their sustainability strategies. If they do not, they are at risk of not only losing money as their operational costs start to soar, but they are likely to lose their competitive edge among potential partners and investors in the near future.

This is the warning from Tygue Theron, Head of Business Development at Energy Partners Intelligence – a division of Energy Partners and part of the PSG group of companies – who says that large local companies' environmental, social, and governance (ESG) strategies are coming under increased scrutiny by stakeholders. "We've increasingly seen corporates being called out in recent years over their low ESG scores. This is due to the negative impact these businesses are having on world around them – either from an environmental, social or governance perspective. Knowing this, businesses need to understand that their sus-

tainability strategies should be about more than simply keeping operational costs low."

Theron also notes that the international financial reporting structure (IFRS), which every publicly traded company must adhere to, has made it a requirement to disclose non-financial climate-related information about business operations. "In short, public companies are forced to take an in-depth look at their environmental impact and the resources that they use and make a change if they want to be perceived as viable investments."

Interestingly, he adds that investors are currently hungry for companies that take ESG responsibility seriously, so a well-structured sustainability plan will give a company a significant boost in its investment appeal. "Even if a company hasn't made substantial strides in curbing its carbon impact yet, committing to a sustainability strategy that takes the business risks into account and shows these will be addressed can be enough to send the potential for investment through the roof."

In addition, corporates can also enable access to better interest rates on business loans. Sustainability-linked finance is a massive benefit in terms of

lowering the cost of capital for businesses that have a forward-thinking vision.

However, Theron also points to one major possible challenge facing companies looking to commit to more investor friendly ESG strategies. "There are so many frameworks to base a sustainability strategy on, and a fair number of them will have no effect on an ESG score. We often see clients pursue the wrong priorities and adopt the incorrect frameworks, which is why we have started specialising in ESG consulting. We are uniquely positioned to set the strategy and execute it with a strong implementation layer within our team, focusing on the ultimate goal of helping clients ensure that they implement the correct frameworks, use their time effectively and get the right results with their strategies."

Ultimately, Theron says that sustainability strategies have become incredibly complex and specialised. "It is more important than ever to have the right strategy in place. In order to develop an impactful strategy that allows the company to make the right impact for years to come, it's essential to partner with specialist that has a proven track record and can hold the business accountable to its plan."

Re-use, re-purpose, recycle – the changing waste management model!

The value of sustainable waste management has never been more apparent, as an increasing number of businesses adopt a 'circular economy' approach.

THE understanding is dawning as to the true value of implementing effective waste management. It is worth noting here that the country generates more than 122 million tons of waste per annum, and at present only around 10% is recycled – meaning that some 90% of it ends up in over-capacitated landfill sites.

"What organisations are now learning – thanks to the pressure from both Environmental, Social and Governance (ESG) and the public at large – is that much of this non-recycled 90% can actually be re-used as alternative resources, when managed effectively," explains Kate Stubbs, Marketing Director at Interwaste.

She notes that what is needed is to shift from the traditional linear production process – the take-make-dispose model – towards one that aims to reduce all unnecessary waste materials, reduce the consumption of energy and raw materials and, where there is excess, to feed this back into the cycle. This, she says, is the definition of the 'Circular Economy' model, where waste created in one industry is re-purposed for use in other areas of industry and the economy, and where disposal is the final option, rather

than the immediate go-to.

"Government's latest priority is the new Extended Producer Responsibility (EPR) rules, which insist that producers of particular products that ultimately produce waste are required to take responsibility for these products after consumer use. By doing this, government ensures that from the inception of production, producers have to consider the total impact of the waste generated from their products."

She believes that we will increasingly see companies having to demonstrate how the full life cycle of their products fits within the circular model, particularly as more consumers become aware of, and concerned by, the notion of product sustainability.

"This is the crux of the matter for us at Interwaste – providing innovative solutions to such businesses, and through this, helping them to not only address changing legislation, but also to evolve into truly socially conscience corporate citizens."

The company has a strong track record here already, she continues, having assisted a number of customers in achieving their



Kate Stubbs.

zero waste to landfill, landfill diversion and recycling goals. From an Interwaste perspective, this is achieved by developing or finding alternative solutions that will allow these enterprises to re-use, re-purpose or recycle their waste streams.

"A great example of the kind of work we do in this space is the Danone 'One Child One Desk' initiative, where we were a partner in a project to turn waste into useful materials. In this example, used yoghurt tubs were turned into desks for less fortunate

children attending Early Development Centres (EDC). Being a collaborative project, it demonstrated exactly how effective it can be when government, corporate and consumers come together with a specific purpose in mind."

"Interwaste understands the importance of going green, hence our innovative solutions that are designed to provide the perfect balance for businesses seeking to meet ESG targets, while also being genuinely socially conscious corporate citizens," she concludes.

Walking the talk

VFS Global, which claims to be the world's largest outsourcing and technology services specialist for governments and diplomatic missions worldwide, reported key sustainability achievements in 2021 and shared its Environment, Social and Governance (ESG) targets for the near future. The company documented these highlights and key business developments in an 'Integrated Report', released on 6 June 2022.

The 2021 report based on Global Reporting Initiatives (GRI) standards captures VFS Global's sustainability strategy based on five distinguished pillars – Contributing to Sustainable Economic Growth,

Delivering Good Governance, Nurturing our Colleagues, Protecting our Environment and Supporting our Communities. Each of these pillars is aligned to the organisation's business strategy, the United Nations (UN) Sustainable Development Goals, and national priorities. They also include a considerable focus on Diversity, Equity and Inclusion, Employee Empowerment, Reduction of Greenhouse Gas (GHG) Emissions and Community Empowerment.

"In 2021, we built a Sustainability strategy spanning across five fundamental pillars backed by well-defined KPIs and targets linked to the performance goals of the sen-



ior management and cascaded across the organisation to maximise impact," said Dr. Elena Primikiri, Head – ESG, VFS Global.

Highlights 2021

Reduction of GHG Emissions – Through measures for energy conservation, purchase of renewable energy,

and offsetting initiatives, VFS Global takes reasonable steps to reduce its carbon footprint and contribute to the global efforts to tackle climate change.

- 52% of VFS Global's electricity usage worldwide is covered by renewable energy
- Green procurement: 18% of our locations worldwide use certified green printing paper

Diversity, Equity and Inclusion

- Female to Male ratio (across all ranks): 58:42
- Female ratio in senior management: 23%, targeted to 28% by end of 2022
- Close to 60% of operations staff (workforce managing visa application centres) worldwide are women
- Equal pay ratio 100%

Workforce empowerment

- Employee engagement: 67% - (above the industry average of 58%*)
- Training & development: 82% of the global workforce attended at least one training programme in 2021
- Average person-days of training participation: 2.9

Community Outreach

- More than 55 000+ individuals benefited through VFS Global outreach initiatives
- In 2021, 60+ community initiatives rolled out across 22 countries

(* Industry (IT/ITES) average of from 2019)

MetPac supports Trash4Treats programme

METPAC-SA, the Producer Responsibility Organisation (PRO) that represents the metal packaging recycling industry in South Africa, is partnering with Trash4Treats to bring the message about the importance for recycling to primary school children in previously disadvantaged communities. Trash4Treats is an educational campaign that encourages school children and the surrounding communities to bring recyclable waste to school.

During these “activation days” the energetic Trash4Treats team teaches kids about the why, what and how of recycling.

The class or grade that collects the most recyclable waste is rewarded with exciting treats from the Trash4Treats spaza shop.

In addition, the schools that collect the most recyclables during the year will win their share of R100 000 in prize money towards upgrading their facilities (1st Prize: R40 000; 2nd prize: R30 000; 3rd prize: R15 000; and R5 000 that will be awarded to the schools in 4th, 5th and 6th place).

Until now, the pilot phase of the project as mainly been funded by INEOS and only targeted areas in the Western Cape, including Mitchells Plain, Gugulethu, Khayelitsha, Nyanga, Tafelsig, Philippi, Heideveld and Weltevreden Valley North. Thanks to the overwhelming success of the pilot programme, however, it has convinced other sponsors such as MetPac-SA to come on board to help take



the message about the recycling of metal packaging to a wider audience. Thirty participating schools located in the Western Cape will receive educational posters, specially branded

large collection bins and bulk bags to assist them with their ongoing collection efforts.

“It made a lot of sense for MetPac-SA to become involved with the Trash4Treats programme. Not only does

it reach very important demographics of our target audience, namely primary school children, their parents, educators and the surrounding communities, but it also demonstrates to them that waste has value. They get to experience the principles of a circular economy in a practical and immediate way. Post-consumer packaging that might have ended up in landfill or the environment, now makes money for the school. Moreover, by connecting them with local waste collectors who buy back the collected materials at the going rate, a sustainable and mutually beneficial relationship is created between the school and the waste entrepreneur that benefits the whole community,” explains Kishan Singh, Chief Executive Officer of MetPac-SA.

Michael Baretta, Managing Director of DotGood, coordinator of the Trash4Treats programme said they are very excited about MetPac-SA’s involvement in the project. “Currently 6% of our overall recycling waste collection is metal. In the last 12 months, we have engaged with more than 32 000 learners, donated R150 000 to schools and collected more than 50 000 tonnes of waste from the schools that are part of the initiative. Thanks to the growing financial support, we will be able to almost double our reach and these numbers with a method and message that have proven, long-lasting benefits for the environment, society and the economy”.

For more information, visit www.trashfortreats.com or www.metpacsa.org.za

PAMSA announces SA paper production and recycling stats



SOUTH Africa recycled 1.15 million tonnes of paper and paper packaging in 2021, representing a paper recovery rate of 61.4%.

“The 2021 recovery rate reflects a 9% drop on the previous year, which can be attributed to Covid-disrupted supply chains coming out of 2020 and into 2021, as well as a shift in the economy and buying trends,” says Jane Molony, executive director of the Paper Manufacturers Association of South Africa (PAMSA).

South Africa has a largely successful paper recycling economy – with a five-year average paper recovery rate of about 70%. “The country has been using recycled paper as a raw material in tissue and packaging products since as early as 1920,” notes Molony.

The 9% drop does not mean that the country is recycling less paper. There was marginally more paper collected in 2021 than in 2020 (1.10 million tons), in fact. However, the consumption of paper and paper packaging increased year on year by 17%, which knocked the percentage out.

Last year also saw more paper products being put into market as brands shifted from plastic to paper packaging. In addition, businesses and schools opened up again.

The association is cautiously optimistic about the 2022 recycling statistics, as quarter one’s numbers are showing an uptick. “Waste paper is a commodity and subject to market dynamics and cycles,” says Molony. “Throughout the world, there has been a significant demand for recycled fibre.”

The country produced 2.1 million tons of paper and paper packaging in 2021, imported 760 000 tons and exported 545 000 tons. This put the apparent consumption of paper and paper packaging at 2.31 million tons.

Paper recovery rate explained

Pre-pandemic, some of the South African recyclers and manufacturers secured warehouse space for waste paper so that they could continue to buy stock and meet market demands. “We entered the pandemic

period with a surplus of waste paper, however in 2021, this surplus was depleted. This knocked the recovery rate percentage down,” says Molony.

The important aspect to note is that paper has not ended up in the landfills. It is still within the system as stock.

Recoverable paper excludes paper that is unsuitable for recovery such as tissue products, cigarette papers as well as corrugated boxes that leave our shores along with the fruit, wine and other exports. The country exported some 574 000 tons of paper packaging in 2021.

Climate-friendly resource

“The use of more pulp, paper and paper packaging should not be frowned upon as a cause of deforestation or being bad for the environment,” Molony explains. “South African pulp and paper mills only use wood fibre from sustainably managed plantations. After mature trees have been harvested, new trees are planted, ensuring sustainable supply and increased carbon uptake and, of course, storage of carbon in harvested wood products, including paper.”

Key to the success of paper recycling is separation-at-source by consumers, including businesses, schools and academic institutions, and the infrastructure to support the collection from consumers. Clean and dry paper is essential. Informal recycling collectors and waste traders will earn a better rate if the paper is of good quality.

“We also need to close the gaps between our technical capacity to recycle, infrastructure to recover and collect, and importantly awareness, education and behaviour change among consumers,” concludes Molony.

FUN FACT:

Since 2003, the South African paper industry has diverted more than 20 million tons of paper and paper packaging from landfill. This has saved 62 million cubic metres of landfill space. If baled, the amount of paper would go around the equator 1.5 times.



WE GIVE THE METAL PACKAGING INDUSTRY A UNIFIED VOICE AND PRESENT INDUSTRY’S VIEWS

DRIVING SUSTAINABLE METAL PACKAGING

METPAC-SA BRINGS TOGETHER THE ENTIRE METAL PACKAGING VALUE CHAIN IN SOUTH AFRICA

MetPac-SA is a registered Non-Profit Company as defined in Section 21 of the Companies Act No. 71 of 2008, registration number: 2017/216419/08. It is also a registered Producer Responsibility Organisation (PRO) with the Department of Forestry, Fisheries and the Environment (DFFE), EPR Registration Number: 19/7/5/P/PRO/20210720/005.

MetPac-SA’s mission and objectives are focused on establishing the metals packaging industry as a valuable and recognised contributor to sustainability throughout the supply chain and beyond. We support and represent members on industry matters related to operational, regulatory and environmental issues.

In addition, we focus much of our resources on promoting the benefits of metal packaging and the sustainable attributes of steel and aluminium.

CONTACT: Kishan Singh – Chief Executive Officer

E: ceo@metpacsa.org.za | **M:** 082 880 9580 | **F:** 086 710 3532

W: www.metpacsa.org.za

METALS



City calls for businesses to submit waste management plans by 31 October

THE City of Cape Town reminds all businesses to respond to the calls by the Western Cape Government for all organic waste generators to divert 50% of organic waste away from landfills by 2022, and 100% by 2027. In order to meet these obligations and promote general waste minimisation, the City requires all organic waste generators in the hospitality, and food manufacturing/processing industries to submit Integrated Waste Management Plans to the City for consideration and approval by 31 October 2022. This is an extension to the original deadline of 31 August.

The City's Mayoral Committee Member for Urban Waste Management, Alderman Twigg visited some businesses recently to help raise awareness and explained the need to reduce the disposal of organic waste to landfills.

"Organic waste that ends up in landfills is a significant contributor to climate change. When this waste breaks down in the landfill mass, it creates landfill gas. This gas, made primarily of methane, has been shown to have a global warming potential approximately 25 times higher than carbon dioxide," said Alderman Twigg.

Integrated Waste Management Plans cover all waste produced on the premises, including organic waste, and should include:

- An assessment of the quantity and type of waste generated
- A description of the services required to store, collect, transport and dispose of the waste
- A plan to separate recyclable and non-recyclable material at the point of source
- A waste minimisation plan (including plans for achieving organic waste minimisation targets)
- A pollution prevention plan
- Details of potential environmental impact of the waste
- The type or characteristics of environmentally sensitive waste
- The amount of natural resources consumed in the manufacturing or production process that result in waste
- The targets for recovery of waste (minimisation, re-use, recycling)
- Programmes and targets to minimise the consumption of



Alderman Grant Twigg (right) confers with Park Inn Hotel manager Alfonso Van Vuuren.

natural resources "Governments throughout the world, are grappling with the extremely high volumes of waste that is generated by modern industrial economies. All over the world, we can see the unfortunate results of waste on our environment, and it is becoming clear that we need a new way of thinking about production and consumption.

"We are aware that

the past few years have not been easy, especially for the business community, this is not a way to make their lives more difficult but just to alert them that the requirement for each business to develop and submit a waste management plan is part of our efforts to build consciousness around waste and ensure that waste is considered as part of business planning processes.

Too often, this is treated like an afterthought," said Alderman Twigg.

Cape Town has a very robust private organic waste processing sector offering many alternatives to landfilling. Organic waste processing solutions include animal feed, composting, protein recycling and energy generation.

To find out more about the private ser-

vices offered to the organic waste generating sector (including hospitality, food manufacturing and processing industries), the City recommends that people should contact the following non-profit organisations who have a list of all its members offering the different processing solutions:

- ORASA (Organic Recycling Association of South Africa)

- SAMIRO (South African Mass Insect Rearing Association)
 - SABIA (Southern African Biogas Industry Association)
- Green Cape's Waste: Market Intelligence report 2021 (https://www.greencape.co.za/assets/2021_DIGITAL_WASTE-MIR.pdf) gives great insight into the 2021 organic waste management status in Cape Town.

The city is planning an information session for the 3rd week of September inviting all relevant sectors to get clarity and more information on organic waste.

Please contact waste-wise@capetown.gov.za if you would like to receive further details.

Online submission of Waste Management Plans

Go to the solid waste accreditation site to submit your waste management plan: <http://web1.capetown.gov.za/web1/swma/>

Application forms are available on the City's website: <https://www.capetown.gov.za/City-Connect/Register/Business-and-trade/Register-as-an-accredited-waste-services-provider>

Distell - closing the loop on waste

KHAYELITSHA is a poor Cape Town settlement where jobs are few and prospects are slim. But should that preclude it from entrepreneurial opportunity?

In 2019, Distell, South African producer of wines, spirits, ciders and ready-to-drinks, partnered with the Western Cape's Department of Environmental Affairs and Development Planning, and the Cape Town City Council, to establish GreenUp.

Explains Charles Wyeth, Distell's acting group manager of sustainability: "The goal of our private/public partnership was to start cleaning up Khayelitsha, while also generating jobs and building skills."

The first step envisaged by GreenUp was to start clearing the area of beverage packaging and other solid waste. Waste pickers would be equipped with protective gear and custom-built trolleys and trained in collecting, separating, and processing what they describe as "post-consumer

materials" for recycling.

They would also be taught financial, business, and operational skills to negotiate with and supply their pickings to recyclable buy-back centres established for the purpose. Buy-back centres would process the materials for on-sale to packaging manufacturers for the cycle to repeat itself.

There are now 165 environmental assistants, as waste pickers are known, in Khayelitsha, supplying to seven buy-back centres in that area.

Similarly modelled enterprises have since been established with regional and local authorities in Gauteng, in Alexandria and Soweto; and in KwaZulu-Natal, in Durban and Newcastle, involving hundreds more people.

It is estimated environmental assistants each collect a daily average of 200 kg of recyclables that would otherwise find their way into landfills. The waste - glass and PET bottles,



paper, metals, plastics - comes from households, taverns, streets and informal dumps.

GreenUp has worked with national government's Expanded Public Works Programme

to extend the number of environmental assistants involved.

Most recently, GreenUp has begun a collaborative glass recycling initiative in KwaZulu-Natal, the

province that has been hardest hit by political unrest and climate extremes. Here it is working with Heineken. Already the initiative has cleaned up certain waste products from

several informal settlements, as well as the entry and exit points of the Hluhluwe Imfolozi Game Reserve.

Applying similar training and infrastructure principles to GreenUp, Distell also runs a bottle retrieval and recycling initiative, known as the Bottle Recovery programme. Entrepreneurs who specialise in bottle recovery are registered with the company, become part of a digital network, and are assisted in skills development to establish themselves as self-sufficient businesses owners. While this project helps to lower the company's packaging footprint even further, right now it also provides a much-needed source of supply, given the continued worldwide shortage of bottles.

Shabeer Jhetam, CEO of the Glass Recycling Company, speaking to WoSA CEO Siobhan Thompson, has been quoted as saying that glass recycling alone has pro-

duced income generation opportunities for around 50 000 waste pickers countrywide.

Currently 40% of cullet (crushed glass) goes into the manufacture of new glass bottles in South Africa. Legislation under the Extended Producer Responsibility Scheme requires that the collection rate be increased to 64,4% by 2027. This will mean more revenue for those involved in the waste recovery programme.

Last year, GreenUp won the recycling game changer award at PETCO, South Africa's pre-eminent environmental awards initiative, recognising excellence in re-use, recycling and waste minimisation among businesses, organisations, community groups and individuals within the South African plastics industry.

Some of the 165 environmental assistants, as waste pickers are known, in Khayelitsha, supplying to seven buy-back centres in that area.

Plastic and waste littering - a consequence of failed urban strategy

Fixing South Africa’s broken waste management system.

WITHOUT the correct infrastructure to process post-consumer waste, the massive pollution it is causing in South Africa will translate into even more flow of plastic waste into the environment. Ideally, and it works for developed countries, the recycling chain for plastics is simple: collect, clean, sort, grind into flake and create new products. This is not the case in our country, where the recycling chain is far longer, and is literally weighed down because of the conditions under which waste is collected, which in turn makes it more expensive to process.

Anton Hanekom, Executive Director of Plastics SA, the organisation that represents all sectors of the SA plastics industry, is fighting what sometimes feels like a losing battle. “The current mandate of municipalities is to collect and take to landfill. The collectors waste pick from those landfills and because ‘wet’ (organic) waste is not separated from ‘dry’ recyclables, what is

recovered is very dirty and contaminated, so requires extra washing and drying processes.”

Hindering the collector’s recovery is the limited time they have to cherry pick through the landfills waste before bulldozers cover the garbage with sand. What they can collect is sold to buy-back centres that pick through a second time before baling product that will be delivered to recyclers. These companies also pick through the product, discarding where necessary. Throughout these picking stages there is a waste element that will go back to landfill, or worse end up in the environment. “Each of these steps adds costs and contributes very little value,” says Hanekom.

As an end product, and largely because it is lightweight, floats and is visible, plastic been identified as one of the major pollutants, which is somewhat unfair because it has enormous reusable benefits.

The latest (2020) plastic recovery stats show 43,7% of all recy-

clable plastic waste were recovered. Much of this was lost because of the contamination at dump sites.

Households already understand the need for separation but as the latest figures from Stats SA show, more than 39% of South Africans do not have access to formal waste management systems and need to rely on their own means to deal with their waste.

If centralised waste will have far greater value for all and more players can enter the recycling chain. “Wet waste will go to industrial composting facilities, and/or landfill where it will decompose. Dry waste at a central depot can be sorted for recycling, even sweet wrappers and single-use straws that are not currently recovered from landfills.

“For the products that are not recyclable or sold to recyclers, we need to develop solutions, even if it means small scale incineration or pyrolysis - the heating of an organic material - to provide energy or fuel



for the beneficiation facility. The added benefit is that “the undesirables” will be in one spot from where it can be beneficiated without incurring additional costs to collect.”

As it is, only 22% of all locally manufactured plastics waste is available to market. Hanekom says the industry believes that volumes will increase in time. “Over the past five years, we have defi-

nately seen a greater awareness around the need for recycling and an embrace of the circular economy. This can be attributed to ongoing marketing and educational campaigns, that have raised awareness of the dangers of littering and the importance of recycling,” says Hanekom. “However, we need to continue with these efforts to change the traditional, linear mind-sets of “use

and dispose” so that we can keep materials in the value chain for as long as possible.”

Commenting on deposit initiatives that have worked well in several overseas countries, Hanekom said that this approach had been tried here by some major retailers and hasn’t caught on, probably due to collection logistics and waste volumes being too low to sustain economic feasibility.

Regardless that Plastics SA and its members motivate and undertake clean-up operations, and even if innovations come about that allow plastics to be 100% recyclable, or replaced with an alternative, the fact remains that these products will not be collected while the system remains broken. “All we are really doing right now is putting a bandage on the problem,” says Hanekom.



Reduce your carbon footprint by reducing and recycling your waste!



We need to slow the flow of waste at its source and improve the way we manage it!



Recycle your plastics - it conserves energy and less greenhouse gasses are emitted!



80% of marine pollution originates inland and reaches the oceans via our rivers and waterways.



In a Circular economy the value of plastic is retained in the economy for as long as possible.



Plastics can be identified by specific numbers which often appear inside triangles on the bottom of products.



Make sure you reuse or recycle all plastic packaging correctly.



Your duvet inners and pillows are often made from recycled PET! Look after them and they could last a lifetime!



Reuse plastic containers to extend their lives.



Buy good quality products that will last.



Did you know that many items of clothing are made from recycled plastics?



Recycle your plastics.

www.plasticsinfo.co.za | **Plastics** | SA

New approaches from OMRON for more efficiency in High-Mix, Low-Volume (HMLV) packaging

Five challenges in packaging and palletizing processes and how they can be overcome with the help of smart robotics solutions.

Robot-assisted automation solutions offer support

Smart robot-based automation solutions can help overcome the need for manual labour that arises in High-Mix, Low-Volume (HMLV) production. Such solutions include robotic picking, packing, palletizing, machine tending, and optimized automated intralogistics..

Challenge 1: Mixing products in secondary packaging

Mixing different single products in a display carton presents challenges. To handle and improve the flow of goods, a solution combines a complete range of different robotic automation technologies, for example, into a single, fully integrated packaging system that offers built-in algorithms that allow the different production lines to be coordinated and flow rates to be optimized.

For users, this means greater flexibility, fewer machine idle times, a reduction in the workload for employees, and lower costs and complexity in the (re)packaging line.

Challenge 2: Material replenishment on the line

It makes sense to improve line-side replenishment (LSR) while avoiding the need for operators to perform repetitive tasks. Finally, automating the supply of consumables minimizes intermediate storage of consumables and waste in the re-packing area. Cobots, perhaps combined with mobile robots, can remedy this situation by assisting with material feeding. Such collaborative robotic solutions can improve throughput while allowing employees to focus on value-added tasks. Examples include selective compliance assembly robot arms (SCARA) tasked with loading bottles or other containers, or high-speed parallel robot solutions used to align and position items

Challenge 3: Intralogistics and intermediate storage

Innovative robotic solutions can help here to optimize the throughput and availability of required goods. Material transport and shipments can be handled

by autonomous mobile robots.

The advantages of automated material transport are obvious: automatic replenishment ensures reduced inventories, space optimization, and just-in-

(WIP) is automated.

OMRON robot solutions are based on traditional stationary robots, collaborative robots (cobots), autonomous mobile robots (AMR), or the MoMa (mobile manipulator). For the

mize workflows without having to deploy a real robot at all.

Challenge 4: Unpacking and distributing goods

Distribution centres or repacking sites must deal with other challenges, including depalletizing and unpacking cartons, transporting goods to be repacked, but also disposing of waste. In addition, there is a steady increase in SKUs and a shortage of skilled labour, which further complicates the tasks. Fully or semi-automated handling and robotic transport can save a lot of effort here.

AMRs can operate as part of a fleet that drives autonomously and executes orders based on a picking system.

"Pallets are no longer needed along the line and waiting times are eliminated.

Added to this is the traceability and control of stock, while the movement of small-batch inventory (WIP) is automated."

time procurement. At the same time, waste can be minimized, and safety strengthened. Pallets are no longer needed along the line and waiting times are eliminated. Added to this is the traceability and control of stock, while the movement of small-batch inventory

AMRs OMRON Fleet Simulator additionally offers the industry's first mobile robot simulator for factory and manufacturing applications. It plans traffic and workflows for fleets of autonomous mobile robots, allowing users to identify potential bottlenecks early and opti-

Challenge 5: End-of-line palletizing

Palletizing is not a suitable task for human workers. Innovative EOL palletizing solutions provide support here. Cobots significantly simplify palletizing. Palletizing with collaborative robots helps users quickly set up their palletizing specifications. Compared to industrial robots, such a solution requires 50% less floor space. A safety fence or cage is not required, and operators can safely work side-by-side with the robot, enabling continuous operation. Operators can easily remove an entire pallet without stopping the cobot.

Conclusion

Modern automation and robotics solutions help make co-packing and packaging operations fit for the factory of the future by enabling a perfect balance between productivity and ease of use. Solutions are available that are scalable both upward and downward to handle swinging demands from supply chain, reduce total cost by reducing topics as floor space required or intermediate stock.

Advanced plastics for longer industrial equipment life



TECHNOLOGICALLY advanced materials have revolutionised many applications in the industrial environment with engineered plastics able to outperform and outlast steel in heavy-duty applications such as bearings, bushes and protective housings.

German manufacturer, Igus, introduces several hundred advanced plastic products and chainflex cables to the market every year. Igus South Africa, local manufacturers and engineers products and materials that can dramatically improve equipment and processes. Igus South Africa managing director, Ian Hewat, says "Our e-chains allows direct continuous control with no slip rings or joints required for added reliability, while our specially developed chainflex cables are tailor-made to required applications. We have the widest variety of cables specifically for use with e-chains and dynamic applications. Different outer jackets and specially developed internal material have been developed for these applications and provide users with a three-year guarantee for added peace of mind.

"Having specially developed cables for different applications significantly improves the reliability of the cable systems and provides reduced maintenance and increased lifespans, which in turn increases a system's mean-time-to-failure. Best of all we have solutions for almost all industries wherever there is moving and dynamic cables for measuring, fibre optics, power, servo cables, control, Bus and data systems," says Ian.

Lubricant free

Simultaneously, advanced new materials in the manufacture of polymer plain bearings and bushes allow engineers to replace a wide variety of steel and other traditional bearings. Igus polymer bearings make use of Tribology materials that include polymer, fibre and dry lubricants into the polymer.

Even in the heaviest and dirtiest of conditions these materials can perform flawlessly and can even run underwater with no contamination.



OMRON

The ability to trace individual products (item-level) through the supply chain is becoming increasingly important to fight counterfeiting and increase consumer safety.

industrial.omron.co.za

Underwater drone revolutionises cleaning of net pens

NORWAY's Probotic says that its Probot – an underwater aquaculture drone – can revolutionise clean aquaculture by automating the inspection and cleaning of net pens.

Probotic revealed its initial findings from pilot testing on its Probot drone. According to a news release from the company, the underwater drone automates routine cleaning tasks, one of aquaculture's recurring pain points. Automating this task results in cleaner food production, improved animal welfare, decreased operational costs and reduced climate emissions.

The drone was tested at Ballangen Sjøfarm's sites this summer. After a month of testing, the drone's mechanical aspects have been validated. The next phase of testing will focus on optimising the drone's steering algorithm and

detection algorithm. The prototype currently in testing is Probotic's seventh series of prototypes and is the last prototype series before the production model launches.

Significant findings after the first month of testing Probot prototype P.7*:

- Jet-propulsion system works in real conditions and enables seaweed to flush through the water jet.
- Probot can operate in 90cm/s of water current when in cleaning mode.
- Probot can operate 180cm/s of water current when in inspecting mode.
- The submersible docking station holds the drone secured in place and has gone through one storm with measured one metre/second of water current.



The Probot drone uses a preventive method that cleans the nets and prevents biofilm creation © Probotic

- The hydrodynamics of the drone allows for smooth movement in the water.
- Live video and sensor data from drones are now available.
- Beta version of

detection algorithm already finds holes.

- No deal breakers after a month of testing.

*All stated findings are expected to be improved by further

development.

"The idea for this technology came to me after working several years inspecting and cleaning fish pen nets the traditional way," said Mikkel Pedersen, CEO and founder of

Probotic. "I knew there could be a more efficient way to get the job done, so I got to work on my vision of building a robot that would automate these processes, saving aquaculture companies hours of labour and operational costs."

The fish farming industry's current method of cleaning fish pen nets is reactive, meaning they clean when the build-up of algae growth and debris is so severe that you must clean the nets. This reactive approach negatively affects the environment, fish health and operators. Traditional cleaning is also costly and resource intensive. The traditional systems are still partially manually operated and use high-pressure water pumps to remove algae and debris. One key problem with this approach is that biofilms are flushed

directly into the net – causing an unsatisfactory environment for the fish.

The Probot underwater drone uses a preventive method that's a more natural and gentle way to clean the nets and hinders biofilm creation on the fish nets entirely. The drones clean constantly – the only times they are paused is during battery charging or additional inspection by the operator.

"The Probot system will be rented out as a service, which ensures our sustainability goals and gives us control over the product life-cycle. It also means we are responsible for ensuring the product will function as expected throughout its life, allowing customers to focus on its other high-value operations," Pedersen added.

Source: www.thefishsite.com

Using genetics to unlock the growth potential in oysters



Basket of farmed oysters.

RESEARCHERS at Scotland's Roslin Institute have published multiple papers on oyster genetics that could help the industry produce larger and healthier shellfish.

Insights into the DNA of European flat oysters from a series of studies could inform selective breeding approaches for the scarce shellfish, to improve food security and sustainability.

Scientists from the Roslin Institute developed extensive genetic resources detailing the DNA of oysters and used them to help address the challenges this species faces in terms of

conservation, restoration and aquaculture.

"Our results could contribute to sustainable food production, as oysters have among the lowest environmental impact of any animal protein production," said Dr Tim Bean, Oyster research expert at the Roslin Institute.

The incorporation of genomic information into breeding schemes could be a cost-effective way of enhancing growth traits such as weight and shell size in oysters, scientists concluded.

A separate study, led by scientists from the University of Santiago de Com-

postela and involving Roslin experts, discovered that variations in a region of oyster DNA may be associated with tolerance to a deadly parasite.

Reference genome

To help understand all the genetics information in their studies, the researchers decoded the complete DNA code of the European flat oyster.

Two high-quality reference genomes were separately built to the chromosome level by the Roslin team and scientists from Sorbonne University in France.

Both genomes have been published in Evo-

lutionary Applications and are already being widely used by oyster researchers in Europe.

Growth traits

Scientists analysed the genome of the European flat oyster to look for variations and assess whether growth traits are under genetic control and could therefore be improved through selective breeding.

This research, published in *Frontiers in Genetics*, concluded that it is feasible to genetically improve growth traits in oysters.

Parasite tolerance

In a separate study,

scientists compared the genome of oysters that had not been exposed to the deadly parasite *Bonamia ostreae* with that of long-term affected populations.

The team explored areas of the oyster genome previously linked to resilience to the parasite and identified an area that was strongly associated with resilience to the parasite.

The study was published in *Evolutionary Applications*.

"High quality reference genome assemblies are of immense value when applying genetic tools in aquaculture and conservation. Our genome assembly enhances the resources available for flat oyster research, supports ongoing conservation efforts and selective breeding programmes, and improves our understanding of bivalve genome evolution," said Dr Manu Gundappa, Post-doctoral research fellow, Roslin Institute.

"Our study shows that breeding programmes for flat oyster aquaculture and restoration would benefit from the incorporation of genetic information to identify the best candidates for breeding, thereby fast-tracking genetic progress in key traits in a sustainable way," said Dr Carolina Peñaloza, Post-doctoral research fellow, Roslin Institute.

Source: www.thefishsite.com

PROTEC STEEL INJECTED
PANEL TECHNOLOGY

SERCO

TRUCK BODIES & TRAILERS



SERCO... GIVING YOU THE EDGE

Providing solutions to our customer's challenges for more than 35 years.

SERCO Frost Liner ticks all the right boxes:

- ✓ Low cost of ownership
- ✓ Improved thermal performance
- ✓ Improved durability
- ✓ Proudly South African

Talk to us about our winning solutions to keep you ahead.



Supported by national
manufacturing and
after-sales repair service
36-month warranty.

Durban: 031 508 1000 | Johannesburg: 011 397 8993 | Cape Town: 021 959 7660
Port Elizabeth: 087 255 6711 | Email: info@serco.co.za | Website: www.serco.co.za

SABS
ISO 9001
TRAILER DIVISION

Build thriving communities with **YES**

Seamlessly integrate job creation for young people into your Social and Labour Plans (SLPs) as well as your ESG/SDG strategies and gain levels up on your B-BBEE scorecard.

Join over **2,200** corporate partners such as Anglo American Platinum, South 32, Kumba Iron Ore and more who have signed on to YES to build sustainable communities that work.

#SayYES



YES
4YOUTH
.CO.ZA



Damen Shipyards receives award for pioneering Occupation Qualification apprentices



From left to right: Lusindiso Meje (Assistant Technical Trainer, Damen Shipyards Cape Town (DSCT)), Victor Muhlberg (TETA Executive), Paulos Mahlangu (Training Director, SEIFSA), Sabelo Buthelezi (Chief Director, DHET), Abdullah Galant (Technical Training Officer, Damen Shipyards Cape Town (DSCT)), Terine Lott Cupido (Chairperson, COS), Brian Phike (CEO, Northlink College)

DAMEN Shipyards Cape Town (DSCT) has been honoured to receive an award from the higher education and training establishment Northlink College. The award is a certificate of appreciation recognising DSCT's role in committing to train some of the first 'occupation qualification' apprentices under what was then a new programme launched by the DHET (Department of Higher Education & Training) in January 2019. Northlink commended DSCT for taking part in this programme from the beginning, when its future was still uncertain and its success yet to be demonstrated. DSCT was one of the first companies in South Africa to embrace this new apprenticeship scheme, the COS programme (Centres of Specialisation), at a time when it was still an unproven concept. Only recently has it become mainstream. Working in partnership with Northlink College, the first Damen apprentices successfully qualified in the COS Fitting & Turning programme, the first of its kind in South Africa. Each participant takes part in a three-to-four-year programme that ensures that, on completion, they are competent in their trade.

50% of their time is spent in the college and 50% in the workplace on a rotational basis. 36 individuals are currently in the programme, across eight trades. As well as fitting & turning, trades available include pipe fitting, welding, boiler making, plumbing, electrical, rigging and mechanical fitting. Over 90% of the trainees choose to accept full time jobs at DSCT once they have completed their courses. The college teaches the theoretical side of the roles and basic training in the underlying skills," explains Abdullah Galant, Technical Training Officer at DSCT, "while DSCT provides the real-world exposure to applying those skills in the workplace as well as basic training in safety, the firefighting and other essential procedures. New skills like carpentry are likely to be added over time. We now work with four colleges in total and many of the trainers are former employees of DSCT."

Damen Shipyards Group - Oceans of Possibilities

Damen Shipyards Group has been in operation for over ninety years and offers maritime solutions worldwide, through design, construction, conver-

sion and repair of ships and ship components. By integrating systems we create innovative, high quality platforms, which provide our customers with maximum added value.

DSCT Training Centre

In response to the skills gap identified within the South African maritime industry in 2010, DSCT launched a Training Centre for apprentices to be trained on building vessels to Damen standards, for Damen. Since its launch, the Training Centre has produced 127 qualified artisans through apprenticeships, work placements and ARPL (Artisans Recognition of Prior Learning) programmes, with 24 of these artisans being female. Currently, the Training Centre accommodates 36 apprentices and offers trades in Boilermaking, Welding, Mechanical Fitting, Electrical, Fitting and Turning, Plumbing and Rigging. Work placement at DSCT is offered to students from FET colleges who require hands-on experience in order to receive their qualifications. A great deal of thanks is owed to the various SETAs and FET colleges who have served as reliable sources for apprentices.

Coega Skills Development Centre adds six accredited courses

THE Coega Development Corporation's (CDC) Skills Development Centre (SDC) recently announced it has been granted accreditation by the Quality Council for Trade and Occupations (QCTO) for six new skills programmes, ranging from NQF level 3 to NQF level 4: Coded Welder; Shielded Metal Arc Fillet Welder; Plumbing Hand; Assistant Handyman; General Residential Repairer; Domestic Water and Drainage Pipe Repairer. "The SDC is built on the CDC's 23 years' experience in the provision of unique and tailor-made socio-economic development solutions," says David Lambaatje, CDC SDC Training Manager.

Furthermore, the CDC SDC now offers Professional Cookery as a full National Certificate (NQF level 4) accredited by the Culture, Arts, Tourism, and Hospitality Sector Training Authority. The SDC is located at the Coega Special Economic Zone (SEZ) in the Eastern Cape city of Gqeberha, with mobile capability to provide its services throughout rural and urban South Africa.



Learners at the Coega Skills Development Centre at the Coega SEZ, in Gqeberha

In line with the CDC's vision to be a leading catalyst for the championing of socio-economic development, the Coega SDC was established to contribute to the alleviation of socio-economic challenges through skills development and ancillary services.

The six-month NQF level 4 Coded Welding course contributes to the development of the national skills pool and the shaping of a structured integrated coded welding programme to be implemented nationally. The NQF level 3 Shielded Metal Arc Fillet Welder programme offers 40 credits following suc-

cessful completion of the 50-day course; this type of welder produces a variety of flat fillet welds with carbon steel and stainless-steel materials.

The 61-day NQF level 3 Plumbing Hand course concludes with 49 credits and fits into the larger framework for plumbing skills and competencies.

The NQF level 3, General Residential Repairer has 31 credits and a 37-day duration covering general residential maintenance. The primary aim of these skills development courses is to offer unemployed youth an opportunity to access employment or

become entrepreneurs, thereby contributing to the improvement of livelihoods and ultimately, economic development.

Funding is a key enabler for the Coega SDC to execute its training mandate. Currently, the SDC solicits funding in the form of conditional grants from various SETAs. "When funding is approved, the CDC Recruitment and Placement Unit scouts the Gateway 2 Opportunity (G2O) database for suitable candidates," explains David. Companies can enlist the services of the SDC on a fee-for-service basis.

The pandemic's effect on women in academic medicine

By Ellen Goldbaum, University at Buffalo

LIKE women in every other sector of the economy, those working in academic medicine have been negatively impacted by the exceptional demands put on them by the COVID-19 pandemic, according to a commentary called "Pandemic-related barriers to the success of women in research: A framework for action." It was published recently in Nature Medicine.

"During the first year of the pandemic, when schools shut down and went to 100% remote learning, we saw that it affected women disproportionately, having to stay home and teach their children while their research languished," said co-author Anne B. Curtis, MD, Charles and Mary Bauer Professor and Chair of Medicine in the Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo. Pamela B. Davis, MD, dean emerita of the

School of Medicine at Case Western Reserve University, is first author.

The commentary was written by Davis, Curtis and their co-authors, all of whom are members of the Clinical Research Forum's (CRF) Academic Achievement Committee, which was established by the CRF during the pandemic in response to awareness that women in academic medicine were being more negatively impacted than their male counterparts. The mission of the CRF is to provide leadership to the national clinical and translational research enterprise; it was formed in 1996 to address the "unique and complex challenges to clinical research in academic health centres."

Even prior to the pandemic, the authors note, women in academic medicine were paid less than men in comparable positions, received lower startup funds for laboratory research and took longer to be promoted.



Credit: Unsplash/CC0 Public Domain

Gender disparities in research

In addition, they write, women have fewer "conventional markers of achievement" in academia than do men, such as principal investigator positions on research grants. Women write fewer grant applications than men; they have fewer grant renewals; they get lower funding amounts for initial grants; and are first or last author on fewer papers.

The reasons for these disparities have long been known, said Curtis. The pandemic sharply exacerbated them.

"Society expects women to assume the major portion of the

burden for child rearing, and women themselves feel an obligation to put family above their own needs, to the detriment of their own career development," she said. "There still isn't the sharing of responsibilities in two-career families to mitigate these problems."

The paper includes a detailed "menu" of proposed solutions. These include providing financial support to hire technicians who can continue lab-based research for two to three years while women researchers deal with their child care responsibilities at home, or supporting child care at home so women can continue their lab-based research.

We value your input

Only through your input can we continue to improve.

- Comments
- Suggestions
- What would you like to hear about

editor@cbn.co.za

Rainwater unsafe to drink due to chemicals: study

RAINWATER everywhere on the planet is unsafe to drink due to levels of toxic chemicals known as PFAS that exceed the latest guidelines, according to a new study by Stockholm University scientists.

Commonly known as ‘forever chemicals’ because they disintegrate extremely slowly, PFAS (per- and polyfluoroalkyl substances) were initially found in packaging, shampoo or makeup but have spread to our entire environment, including water and air.

“There is nowhere on Earth where the rain would be safe to drink, according to the measurements that we have taken,” Ian Cousins, a professor at the university and the lead author of the study published in Environmental Science and Technology, told AFP.

A compilation of the data since 2010 that his team studied showed that “even in Antarctica or the Tibetan plateau, the levels in the rainwater are above the drinking water guidelines that the US EPA (Environmental Protection Agency) proposed”, he said.

Normally considered pristine, the two regions still have PFAS levels “14 times higher” than the US drinking water guidelines.

The EPA recently lowered its PFAS guidelines significantly after discovering that the chemicals may affect the immune response in children to vaccines, Cousins noted.

Once ingested, PFAS accumulate in the body.

According to some studies, exposure can also lead to problems with fertility, developmental delays in children, increased risks of obesity or certain cancers (prostate, kidney and testicular), an



Credit: Pixabay/CC0 Public Domain

increase in cholesterol levels.

Planet ‘irreversibly contaminated’

Cousins said PFAS were now “so persistent” and ubiquitous that they will never disappear from the planet.

“We have made the planet inhospitable to human life by irreversibly contaminating it now so that nothing is clean anymore. And to the point that it’s not clean enough to be safe”, he said.

“We have crossed a planetary boundary”, he said, referring to a central paradigm for evaluating Earth’s capacity to absorb the impact of human activity.

However, Cousins noted that PFAS levels in people have actually dropped “quite significantly in the last 20 years”

and “ambient levels (of PFAS in the environment) have been the same for the past 20 years”.

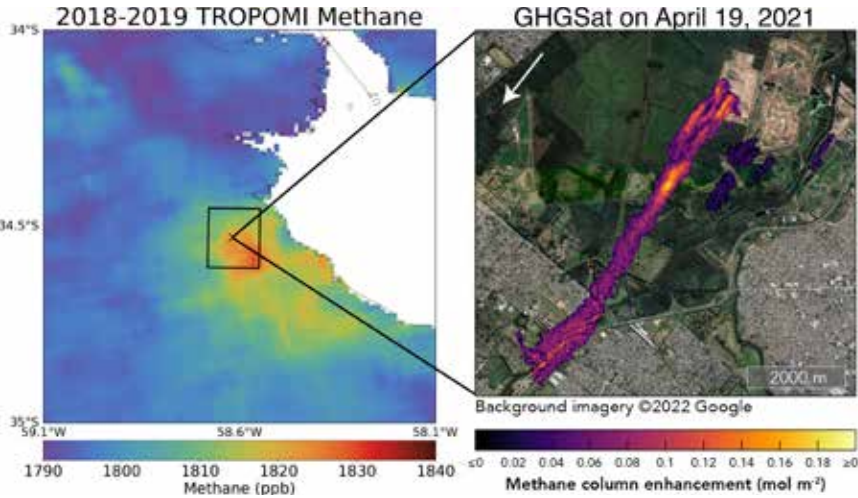
“What’s changed is the guidelines. They’ve gone down millions of times since the early 2000s, because we’ve learned more about the toxicity of these substances.”

Cousins said we have to learn to live with it.

“I’m not super concerned about the everyday exposure in mountain or stream water or in the food. We can’t escape it... we’re just going to have to live with it.”

“But it’s not a great situation to be in, where we’ve contaminated the environment to the point where background exposure is not really safe.”

Methane satellites find landfills with the same climate impact as several hundred thousand cars



Left: methane concentrations measured by Tropomi during 2018-2019 around Buenos Aires, Argentina. Right: zoom-in by GHGSat on April 19th 2021, showing methane plumes from the landfill in the city center. The wind direction is given by the white arrow. Credit: SRON/GHGSat, contains Copernicus Sentinel data (2018–2019), processed by SRON

By SRON Netherlands Institute for Space Research

METHANE is almost thirty times more powerful as a greenhouse gas than CO₂. Researchers from SRON Netherlands Institute for Space Research therefore scan the entire globe for large methane leaks. A landfill in Buenos Aires turns out to emit tens of tons of methane per hour, comparable to the climate impact of one and a half million cars. They also detect large emissions from landfills in India and Pakistan, identifying new low-hanging fruit in the battle against climate change. The work was published on August 10 in Science Advances.

Methane is the second largest anthropogenic contributor to the greenhouse effect, after CO₂. This is due to its large global warming potential over 100 years (GWP-100). Methane is almost 30 times more potent per ton as a greenhouse gas than CO₂. When methane is released through human activity—by oil installations, coal mines, cattle sheds or landfills—it can be made less harmful by flaring it and thereby converting it to CO₂. Even better, if you capture it, you can put it to good use in boilers or stoves. Researchers from SRON Netherlands Institute for Space Research have now used satellite data to locate a number of landfills that are low-hanging fruit in the fight against climate change.

mate change. Four landfills in Argentina, India and Pakistan emit several or even tens of tons of methane per hour.

The SRON methane research team used the Dutch space instrument Tropomi to identify cities with high methane emissions. Buenos Aires, Delhi, Lahore and Mumbai stood out, with urban emissions on average twice as high as estimated in global inventories.

Next, the team asked the Canadian satellite GHGSat to zoom in, which revealed that landfills are responsible for a large fraction of emissions in these cities. The landfill in Buenos Aires emits 28 tons of methane per hour, comparable to the climate impact of 1.5 million cars. The three other landfills are responsible for, respectively, three, six and 10 tons of methane per hour, which still amounts to the impact of 130 000 to 500 000 cars.

“Methane is odourless and colourless, so leaks are notoriously difficult to detect,” says lead author Bram Maasakkers (SRON). “But satellites are ideally suited for this. With Tropomi, we detect super-emitters that pump large amounts of methane into the atmosphere. That is painful to watch because you can solve it with relatively little effort. You could, for example, separate and compost the organic waste, which would drastically reduce methane production. And even in the case of mixed waste, you can still collect or flare the methane produced. Methane has a lifetime of only about 10 years in the atmosphere, so if we act now, we will quickly see results in the form of less global warming. Of course, reducing methane emissions is not enough, we also need to limit CO₂, but it does slow down near-term climate change.”

IN THE NEXT ISSUE:

- Agri-Processing & Harvest Supply Chain
- Automation Systems / Instrumentation & Process Control
- Boilers & Burners / Combustion Technology / Heating Control
- Breweries / Wineries / Distilleries
- Compressors / Plant & Equipment
- Materials Handling & Equipment
- Occupational Health & Safety
- Power Solutions / Energy Efficiency / Power Generation / Transmission & Distribution
- Pumps / Valves / Fluid Technology / Filtration
- Warehousing: Storage / Distribution & Logistics
- Water Engineering: Water Reuse / Water Storage / Grey Water Systems Waste Water Treatment Solutions

Cape Business News is always on the lookout for stories of companies that are shaping the Cape business landscape. If your company has a story to share, in these, or any other business sector, send your story to editor@cbn.co.za for consideration.

CAPE Business News

Chairman:
Rudi Leitner
rudi.leitner@hypenica.com

Publisher:
Robin Dunbar
robin.dunbar@cbn.co.za

Editor:
Robin Hayes
editor@cbn.co.za

Production Manager:
Elise Jacobs
elise.jacobs@cbn.co.za

Sales & Marketing Director:
Robin Dunbar
robin.dunbar@cbn.co.za

Sales Team:
Heather Ferreira
heather.ferreira@cbn.co.za
Shaun Austin
shaun.austin@cbn.co.za
Centaine O'Reilly
centaine@cbn.co.za

Subscriptions:
subscriptions@cbn.co.za

Cape Business News
sales@cbn.co.za

Cape Business News has taken all reasonable care to ensure that the information contained in this publication is accurate on the stated date of publication. It is possible that the information may be out of date, incomplete or the opinion of the author. It is therefore advisable that you verify any information before relying on it. Cape Business News accepts no responsibility for the consequences of error, or for any loss or damage suffered by users of any of the information and material contained in this publication. Materials published in this newspaper are subject to copyright and other proprietary rights.

50LT BREWING TANK WITH STAND

PLASTICS
FOR
AFRICA

3 Montague Drive, Montague Gardens
021 551 5790 | www.plasticsforafrica.co.za

CAPE Business News

Cape Business News, founded in 1980, is primarily a promotional vehicle for companies that have the Cape Business community as a primary target market.

ADVERTISING
For all your advertising requirements,
contact our Sales Team
sales@cbn.co.za

GRIPPER & CO (PTY) LTD
INDUSTRIAL AUTOMATION
& PNEUMATIC EQUIPMENT

TECHNICAL EQUIPMENT SUPPLIERS & AGENTS



158 Lower Main Rd, Observatory, Cape Town
Tel: 021 447 7203 • Fax 021 447 6981

www.gripper.co.za

Worse than sticks and stones

A jolly good evening to you all! What a pleasure it is to end an early spring day in this erudite company!" It was Luke the Dude, announcing himself to the local Pub & Grill, and pausing only for air: "So how about that – fake racism accusers facing the music? About time for a decent injection of common sense, I say. Crying 'Racist!' has become a far too popular sleight-of-hand for those scheming to deflect suspicion from themselves – often at an employer."

"My dear Lucas," considered The Prof, frowning, "what in the list of all things obscure are you talking about?"

"Well," explained Luke. "Racism is bad, we all know that, and speaking the k-word has become a crime that may land the speaker in prison and banished from society. Case in point, elderly Durban lady Penny Sparrow did not even use the word when expressing her disgust over New Year beach-goers urinating, defecating and fornicating on the beach. She did, however, use racist language.

"If others shared her disgust over the... shall we say, anti-social behaviour, they chose to rather shut up in the outrage explosion which deflected all disapproval directly at Ms Sparrow. She was hounded out of job and party, fined R150 000 by the Equality Court, another R5 000 by a criminal court, plus two years in jail, suspended – she died before the suspension ended.

"Vicki Momberg was sentenced to three years in prison for repeatedly using the k-word in a traumatised outburst after she was the victim of a smash-and-grab robbery.

"So, we know that racism is a serious crime. And we also happen to know that being accused of it can have serious consequences."

Bill the Beard was fretting. "May I interrupt to order a beer," he queried in his charming manner.

"Me too!" chorused the other congregators as Miss Lily found a friendlier way. "Tell us where you're heading, Luke," smiled she, "I'm curious."

"The reality is," grinned Luke the Dude, "fake accusations of racism are often made by people with an axe to grind or by wrongdoers in self-defence. Innocent people have suffered unjust consequences because of that.

"But society has been catching on. When Eskom's only two white senior executives were – no surprises here – subjected to sweeping fake accusations, including of racism, high-level investigations exposed the accusers and justice prevailed.

"People are fighting back. As reported by Rapport, a teacher falsely accused of using the k-word was suspended for two years and remained under a cloud of suspicion for another four. But the charges have now been withdrawn and she was awarded compensation. Also, diverting from the sublime, a Michaelhouse boy demanded and received a written apology from two St John's boys who falsely accused him of k-wording in a hockey match (resulting in the cancellation of a full sporting weekend).

OPINION

ON THE CONTRARY

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

.....
Pieter Schoombie
.....

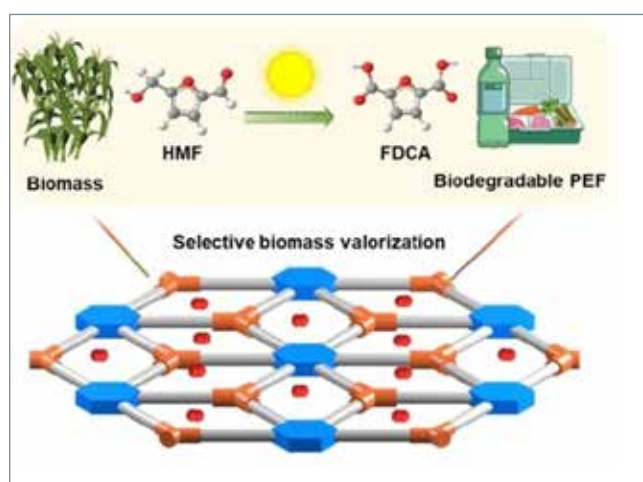


"So, Miss Lily, I'll let Eskom chairman Malegapuru Makgoba have the final word: Any employee making up a reputation-damaging accusation will be 'shown the door'. As directly as that. Let the news spread."

And "Cheers!" said all of us.

E-mail: noag@maxitec.co.za

Efficient titanium-based catalyst used to produce PEF, biobased alternative to PET



Credit: Angewandte Chemie

By Wiley - <http://www.wiley.com/WileyCDA/>

ONE possible replacement for drink containers made from PET is polyethylene furandicarboxylate (PEF), made from renewable resources. However, the production of the raw material for PEF from biomass is still rather inefficient. A new titanium-based photocatalyst could be about to change this, making it more economical to access the raw material for PEF from biomass, as a team of researchers report in the journal *Angewandte Chemie International Edition*.

In the valorisation of biomass, the key chemical 5-hydroxymethylfurfural (HMF) is first obtained from the mix of natural substances. PEF is a recyclable plastic that can be produced from HMF. As PEF has very similar properties to PET, the most commonly used material for plastic bottles, it is used as a biobased replacement. How-

ever, the production of PEF is still expensive, due in large part to the difficulty in producing the raw material for PEF from HMF.

To produce the raw material for PEF, HMF must be oxidized, and this step is inefficient for two reasons. First, unwanted by-products are formed during oxidation with atmospheric oxygen. In addition, the titanium-oxide-based catalysts available to date require UV light. Since UV light only makes up a small portion of the spectrum of sunlight, the efficiency of this photocatalytic reaction is low, making the process expensive.

A group of researchers headed by Ya-Qian Lan and Yifa Chen of the South China Normal University (SCNU) in Nanjing, China, have now developed a titanium-based photocatalyst that overcomes both obstacles. A titanium component in conjunction with an organic oxidizing group forms flat, crystalline nanosheets from an organometallic framework.

By chemically linking the titanium with the organic components, the light absorption shifts from the UV to the visible range, considerably increasing efficiency, say the team.

The reaction is also highly selective, as relatively few reaction partners are required and virtually no waste is formed. The authors suggest that tailor-made photocatalysts like this could also be used to make a number of other reactions more sustainable.

Motorcycle riders breathe easy with air-filtering helmet

By SciDev.Net

A motorcycle helmet that filters out harmful emissions from the air is protecting riders in New Delhi and other Indian cities that rank among the most polluted in the world.

Shellios Technolabs, the New Delhi-based startup that developed the helmet, says filters used in it can remove PM 2.5 and other toxic, vehicular emissions which millions of two-wheeler riders are directly exposed to on Indian roads.

"Since the whole purifying system—including rechargeable batteries, blower and electronic circuit board—is located at the back of the fiberglass helmet it does not interfere with the bike rider's movements or vision but creates a clean, purified air space immediately behind the clear visor," Amit Pathak, one of the company founders, tells SciDev.Net.

Motorcycles, scooters and other two-wheelers are an important means of personal transport in India and in 2019 there were more than 221 million registered units in the country. During the 2021–2022 financial year, more than 13 million units were sold.

Shellios Technolabs received seed funding from India's Department of Science and Technology and support from the Science and Technology Entrepreneur Park (STEP), to develop the helmet which is now being sold commercially at US\$56.

It says the 1.5 kg head gear conforms to government safety and ergonomic standards and has shown, in controlled test environments, to reduce PM 2.5 particles and other outdoor pollutants by 80%.

"The anti-pollution helmet was one of the more promising products taken up for support by STEP considering that it had real benefits for the public that struggles to cope with extremely high levels of pollution in India's major cities," says Deepthi Shanmugam, the Bangalore-based chief executive of the Academy of Technical Education that works with



Helmets fitted with filters have been made available to protect motorcycle riders from harmful emissions. Credit: Biswarup Ganguly, <https://creativecommons.org/licenses/by/3.0/deed.en>

STEP.

New Delhi and Kolkata were ranked as the world's two most polluted cities by the Institute for Health Metrics and Evaluation, Massachusetts, US, in their Air Quality and Health in Cities in a report released on 17 August.

The report which ranked cities on the basis of two major air pollutants—fine particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂)—found the highest population-weighted annual average PM_{2.5} exposure in 2019 to be in Delhi at 110 micrograms per cubic meter, followed by Kolkata at 84 micrograms per cubic metre.

The WHO—which considers PM 2.5 to be the single biggest environmental threat to human health—recommends that annual average concentrations of PM_{2.5} should not exceed five micrograms per cubic metre.

"Our helmet has patented air purifying accessories including a silent blower fan that draws air through disposable, high-efficiency particulate air (HEPA) filter membrane and is powered by rechargeable batteries," Pathak said.

HEPA filters are already widely used in air purifiers found in homes, offices and restaurants in New Delhi. The India air purifier market, worth US\$74.8 million in 2020, is projected to reach US\$565.7 million by 2027, according to Blue Wave Consulting, which attributes the market growth to rapid urbanization and industrialization, resulting in poor air quality and widespread respiratory ailments.