

Best foot forward?



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Crowd funding brings bright prospects?

CAPE TOWN-based Sun Exchange, the world's first peer-to-peer solar leasing platform, has launched a R7 million Uprise.Africa equity crowd-funding campaign to accelerate its ambitious expansion plans.

The capital raised will secure investors a 5.2% equity stake in the company.

Sun Exchange's peer-to-peer solar leasing platform enables anyone, anywhere in the world to own solar cells. Users can build wealth by leasing those cells to power businesses and organisations in emerging markets.

The Sun Exchange Uprise.Africa equity crowdfunding campaign is part of a \$3 million (around R45 million) seed funding round. To date, Sun Exchange has raised approximately \$800 000 (R12 million) from international investors - including \$500 000 (R7.6 million) from the multi-million dollar hedge fund Alphabit Fund.

Abraham Cambridge, the founder and CEO of Sun Exchange, said the campaign offered an opportunity for anyone to invest in one of the most disruptive companies across the African continent.

"Decentralisation, democratisation, and profits with purpose are core values for Sun Exchange. We believe in the power of the crowd and people's ability to unite to create lasting positive social and environmental impacts, while also earning solid financial returns. This equity crowd-funding campaign epitomises those values."

Since launching in 2015, Sun Exchange has built a community of more than 8 000 members across approximately 140 countries and already brought solar power to 13 South African schools, businesses and organisations.

Importantly, this has offset 1 500 tons of carbon per year.

Patrick Schofield co founder of Uprise, said the specialist funding company supported organisations that demonstrated it was possible to run a successful business while creating significant positive social and environmental impacts.

"Sun Exchange is an African success story on the fast-track to revolutionising energy and finance and we are delighted to be part of that journey."

Sun Exchange has already brought in investors such as Boost VC, Alphabit,



Techstars, as well as numerous individual US and European investors.

Schofield said the funds raised through the Uprise.Africa campaign would accelerate the company towards its next stage of growth - including elevating marketing efforts to grow the user base by ten times over the next two years.

In addition, Sun Exchange wants to scale into new markets in Africa in the short term, and then pursue opportunities in Eastern Europe, South America and Central Asia in the medium term.

The company also wants to establish a larger HQ office in Cape Town to accommodate its expanding sales, business development and marketing teams.

Meanwhile, in an unrelated development Cape Town based finance house Mettle - where retail tycoon Christro Wiese is a main investor - has capitalised on renowned development finance institution international investment group CDC's launch of Gridworks.

Gridworks will invest in electricity networks across Africa, and had already invested a not insubstantial R107 million to become a significant shareholder in Mettle Solar Investments.

Mettle said the investment would enable the solar subsidiary to realise its aim of providing cleaner and cheaper sources of

electricity for businesses across Africa.

"In a region where 70% of total energy use originates from commercial and industrial users, Mettle Solar Investments will be in a position to demonstrate the commercial viability of solar power for businesses in Africa."

Mettle currently has 29 projects (15.4MW) in operation in South Africa, Namibia, Kenya and the Indian Ocean islands with a further 12MW currently under construction.

It plans to expand its footprint to other markets in Sub-Saharan Africa -including Angola, Mozambique, Tanzania, Nigeria and Madagascar. Mettle also owns a 50% shareholding in Sustainable Power Solutions, a leader in the construction and operation of solar photovoltaic systems is Sub-Saharan Africa.

Simon Hodson, CEO of Gridworks, said the company was delighted to make this investment and support a very capable management team in its expansion plans.

"With many countries in sub-Saharan Africa experiencing regular electricity shortages there's a clear need for a reliable power supply to business. Our investment will help Mettle bring clean, reliable power to businesses in new African markets where power is often unreliable and leaves a greater carbon footprint."

Qhubeka celebrates 100 000 bicycles distributed



ON 24 October 2019, Qhubeka Charity celebrated an important milestone as it distributed the 100 000th bicycle to programme recipients. Qhubeka is a charity that moves people forward with bicycles, helping to improve access to schools, clinics and jobs. Established in 2005, it has been distributing bicycles through learn-to-earn and work-to-earn programmes since.

"Although we feel like 100 000 bicycles has been a long time coming, we have learned so much along the way, and tailored our strategy accordingly to help impact as many people's lives as possible," says Qhubeka Executive Director Tsatsi Phaweni.

Qhubeka's story began around 14 years ago, when IT entrepreneur Anthony Fitzhenry set out to fund computer centres for schoolchildren in poorer communities. These centres did not have the impact envisioned, however. Upon discussing the reasons for this with local educators, Anthony discovered that the children's biggest challenge was their lack of personal transport.

"They told me that most of the children had to walk long distances to get to schools, libraries or community centres," he recalls. "I realised that if we could improve children's mobility, we could improve their access to education." And so, the idea for Qhubeka Charity was born.

Anthony founded Qhubeka as a corporate social investment project, and it has grown to become an international standalone charity, headquartered in South Africa, with supporters around the world, a limited company in the

Continued on P8



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REMGRO's fibre tigers

STELLENBOSCH-based investment giant Remgro is making a big bet on the local fibre optic industry.

The group's latest set of results shows that Remgro bumped up its investment in Community Investment Venture Holdings (CVH) by a hefty R2.86 billion after a rights issue.

Remgro holds a 54% stake in CIVH, which in turn has the fast growing Dark Fibre Africa and Vumatel fibre optics operations as its main investments.

The intrinsic value of Remgro's investment in CIVH is more than R8 billion – making it one of the biggest holdings in the group's more than R230 billion investment portfolio.

Remgro has also lent CIVH R100 million.

DFA has been an incredible success

story over the past few years. Revenue now tops the R3.5 billion mark – with the 23% annual increase driven by 29% growth in all important annuity income.

Remgro estimated that DFA's monthly annuity income was R163 million – well ahead of the R136 million generated in the 2018 financial year.

Most impressive, is that DFA now covers a sprawling 13 600 km of fibre network in major urban areas and long-haul routes. Last year the company covered a network measuring 10 544km – which clearly illustrates the rapid roll out of fibre.

Vumatel, which was only recently acquired by CIVH, is the other leg of the Remgro's fibre optic network sprint.

Vumatel is a leader in the Fibre-to-the-Home (FTTH) mar-

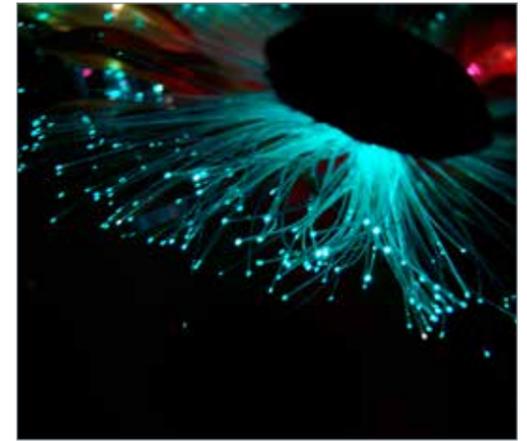
ket with a network that spans over 16 000 km.

Remgro reported recently that Vumatel's profits and subscriber uptake levels have shown a healthy improvement since the business was acquired in June 2018. Remgro adds that Vumatel's year-to-date performance is ahead of expectations measured against the 2020 financial year budget.

One of the big advantages of Vumatel's network is that it also provides 1Gbps free uncapped access to its network to every school that it passes.

The third – and largely unsung – leg of the fibre optic thrust is Remgro's 25% stake in undersea cable network provider SEACOM.

While it might be some time before Remgro makes real money from SEACOM, this is a strate-



gic long term investment in the fibre optic infrastructure.

Remgro CEO Janie Durand said good progress had been made in establishing the "SEACOM business".

He also disclosed that SEACOM had completed the acquisition of FibreCo, and that the Bloemfontein node was now connected to SEACOM's undersea cable

network.

While the fibre optic ventures are not quite as big as Remgro's core investments in healthcare, food and beverages and financial services, the progress of these entities is worth watching remembering the group's successes in backing cellular technology at its fledgling stage when it backed the Vodacom Group in the mid-nineties.

Royal time for Rextru

SALT RIVER-based Rex Trueform, the fashion retailer now controlled by local empowerment pioneer Marcel Golding, saw a smart performance from its Queenspark chain in the year to end June.

Fortuitously, the revamping of Queenspark has coincided with Rextru's diversification efforts starting to find traction.

Golding noted: "Where feasible and the risk of cannibalisation is low, Queenspark continues to introduce new brands to complement the existing ranges."

Golding, who serves as company chairman, said the Queenspark store growth strategy had progressed well with the opening of eight new stores and the closure of one dur-

ing the past financial year.

Golding noted: "Where feasible and the risk of cannibalisation is low, Queenspark continues to introduce new brands to complement the existing ranges."

Rextru's retail segment turnover increased by 15.5% to R678.9 million Golding said, discounting and increased promotional activity negatively impacted the gross profit margin - which decreased to 52.6% (2018: 54.4%).

But despite the decrease in the gross profit margin, increased sales volumes at Queenspark drove gross profit up by almost 107% to R 357 million.

Golding looks intent on running a tight ship with the increase in operating costs increasing only 4.4% to R330 million. This helped Rextru's operating profit soar almost threefold to R32.6 million.



Looking ahead, Golding expected difficult trading conditions is expected to continue over the short to medium-term.

Golding said fresh opportunities to roll out new stores and to take advantage of a tenant friendly property environment remained key to ensuring growth at Queenspark.

RexTru has always held property interests aligned to its old manufacturing premises and head office.

But more intriguing is the recent shift into water through recently acquired subsidiary, Ombrecorp and its investment in SAWW.

In this regard Golding has already changed the corporate identity from Rex Trueform Clothing Company Limited to Rex Trueform Group Limited. This, he said, was to better reflect the diverse nature of its business.

The new water business poured a not

insubstantial R7.1 million into RexTru's after tax earnings for the financial year.

Golding reckoned the investment into water infrastructure sector was an important milestone in the diversification of the group. "The sustainable management of the country's water resources is inextricably linked to the macro economy. A combination of poor infrastructure, mismanagement of state funds, lack of

accountability and low rainfall patterns have seen the increased prevalence of drought-stricken areas across the country."

Golding said the skills and experience inherent in the SAWW group, meant RexTru was ready to play a key role in water security across the country.

He said the SAWW group's operating subsidiaries were performing optimally and were successful working examples of private-public partnerships within the water infrastructure sector.

The property segment now also looks a solid business – centred on the redeveloped Rex Trueform Office Park complex in Salt River and two undeveloped properties in Salt River and a property in Wynberg that serves as a distribution centre to Queenspark.

Rextru's property segment revenue increased 5.8% to R22.8 million,

but operating profit decreased by 4.3% to R9.6 million due to above-inflation increases in operating and inter-segment costs.

Golding said despite the local property market facing challenging economic times, the Salt River and Woodstock nodes have seen a remarkable rejuvenation over the last decade as many seek to live and work closer to the Cape Town CBD.

He added that the rejuvenation has been aided by the fact that the area falls within a designated Urban Development Zone (UDZ) - resulting in attractive tax benefits for developers.

"Many old buildings (predominantly redundant factories) have been revamped into mixed-use developments. With the current property portfolio, the group is well positioned to both contribute and benefit from future development in the area."

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Trans Hex gem in liquidation

PAROW-based diamond mining company Trans Hex Group has been dealt a severe blow.

First the group's plans to sell its 67.2% stake in West Coast Resources (the old De Beers Namaqualand diamond mines) fell through when talks with prospective buyers Kernel Resources were terminated.

It seems it might have been prudent for Kernel to walk away from a deal. Trans Hex has conceded that West Coast Resources'

trading activities had deteriorated over the past few months due to diamond prices declining by 27% and the average diamond grade declining due to lower than expected grades achieved.

This has meant West Coast Resources is not in a position to meet its working capital requirements without it receiving the necessary funding.

Instead of injecting in new working capital, Trans Hex has opted to apply for West Coast Resources to be placed

into provisional liquidation.

The development is exposes a serious flaw in Trans Hex's strategy. West Coast Resources was meant to give Trans Hex – which also owns Angolan based diamond mining operations - a new lease on life after its traditional Orange River alluvial mining operations had reached the end of their life.

In 2011 Trans Hex and other partners paid De Beers R225m for the Namaqualand mines that make up West Coast

Resources. The deal took some years to conclude, but West Coast Resources appeared to under-perform from the very start.

West Coast Resources is situated approximately 60 km south of Port Nolloth along the West Coast of the Northern Cape. The mining area spans a total geographical area of more than 2 750 square km – including two washing and screening plants. The mining area plant facilitates the treatment of the gravel from

northern ore bodies of the Koningnaas Complex (KNC), and the Langklip washing and screening plant treats gravel from the southern ore bodies.

West Coast Resources also operates a final recovery plant at Kleinzee - using Bourevestnik X-ray sorting technology.

Improvements to all three plants were completed in the past financial year.

During the past financial year, West Coast Resources' pro-



duction totalled 123 884 carats compared to 173 920 carats in 2018.

Sales amounted to R240.5 million at an

average price of \$128 per carat (2018: sales of R302.5 million at an average price of \$153 per carat).

Green Cross (roads)

ICONIC Cape Town shoe business Green Cross has taken its first steps on the long walk to profitability.

CBN reported earlier this year that parent company AVI – which bought the shoe business for over R400 million in 2013 – had closed the Green Cross factory in Epping and retrenched 314 affected staff.

This was a major blow for the local fashion wear manufacturing sector – which has for years struggled to compete profitably against cheaper imports.

In the just released AVI annual report, the group noted: "We regret that the retrenchments became necessary but, as with many other South African shoe producers, we found ourselves unable to compete against far cheaper imports and unable to justify the capital expenditure that would have been required to re-tool the factory to enable it to produce ranges of shoes beyond polyurethane soled shoes."

The way forward is for Green Cross to be incorporated into AVI's R1.5billion a year Spitz footwear infrastructure – a move that AVI CEO Simon Crutchley believes should help return the business to "acceptable levels of profitability".

A key initiative will see Green Cross' retail formats re-branded as GX & Co – a more edgy concept that will also include a range of

highly regarded international comfort footwear brands.

In the year to end June, Green Cross saw revenue drop by almost 20% on the back of lower sales volumes.

At operating level Green Cross registered a loss of around R36,1 million.

The remaining carrying amount of the

Green Cross trademark of almost R100 million was impaired – a decision that took into account the extended period it would take to return the business to acceptable profitability from the current base.

The recoverable amount of the Green Cross business was set at R230 million (well down on the R285m

reflected in financial 2018) based on forecast improvements in profits and working capital in line with management action plans in progress.

It remains to be seen just how quickly the successful Spitz culture rubs off on Green Cross.

In the year to end June, the Spitz business

saw revenue decline by 4,7% due largely to a 6,9% drop in footwear sales volumes.

AVI noted that selling prices of core ranges had not been increased since April 2016 – but added that consumer demand was subdued. Operating profit declined from R388,5 million to R333,9 million.



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Seeding Zaad's growth

S T E L L E N - BOSCH-based Zeder Investments, which has just clinched a deal to sell its valuable stake in consumer brands giant Pioneer Foods, looks set to accelerate growth its 95.3% controlled seed development business Zaad Holdings.

Over the past number of years Zeder has ploughed money into establishing and positioning Zaad – headed by former Zeder boss Antonie Jacobs – as a strategic holding company that invests and operates in the specialised agri-inputs industry. The focus is firmly on emerging markets, especially Africa, and at this stage business written outside South Africa already outweighs the volume of

local dealings.

Zaad, in a nutshell, owns, develops, imports and distributes a broad range of agricultural seeds in Africa, Europe and other international emerging markets.

More recently, Zaad has also added strategic plant nutrition and agrochemicals via the acquisitions of the Farm-Ag and Hygro-tech businesses.

Only last month Zaad concluded an agreement to acquire a 40% stake in the EAS group of companies in Kenya. This important deal – which should open up the vibrant East African and central African agricultural markets for Zaad – comes with an option to acquire

an additional stake in EAS in the future. EAS has business operations in Kenya, Uganda, Rwanda, Tanzania and Zambia.

These transactions have seen Zeder commit another R300m investment into Zaad.

Zaad is already a sizeable business, generating some R1.6 billion in revenue in the year to end-January. Profits were around the R200 million mark with bottom line earnings a chunky R191m. Zeder has placed estimated value of R2.2 billion on the business – which speaks volumes for the longer term potential of this specialist business.

At the moment, Zaad does not stand out in Zeder's port-



folio – which includes other well-known Cape-based businesses like Capespan, Kaap Agri and The Logistics Company.

Half year numbers to the end-July showed revenue of R570m yielding headline earnings before interest, tax, depreciation and amortisation of only R20m and a headline loss of almost R9m.

But Zeder directors are at pains to stress that the interim performance should not be extrapolated for a full

year performance.

Zeder CEO Norman Celliers inferred that the summer season activity would ensure a strong second half – predicting that of full-year profits will be acceptable.

Significantly, after the close of interim period Zeder invested another R130m into Zaad by way of a rights issue. The funds raised will help Zaad fund the first instalment of the acquisition of the remaining 50% in Gap Chemicals.

Insulated impact traffic doors for efficient flow through

BOTTLENECKS often occur when the volume of pedestrian, cart and man-ridden traffic inside facilities increases. This can lead to a decrease in functionality as well as productivity.

Wim Dessing, sales executive of Apex Strip Curtains & Doors, says that it is critical to ensure that traffic is allowed to pass through openings in an unhindered manner to alleviate these issues.

“One of the first steps is to eliminate the stop, open, move through and manual actions that traditional single, one-way swing doors require,” he says.

The Apex SR 9000 insulated impact traffic door combines functionality with longevity and opens with a simple hand push or on impact from a cart or man-ridden vehicle such as a forklift truck. The door then automatically closes after traffic has passed through.

In spite of its lightweight construction,

the Apex SR 9000 door is robust. Adding to its durability and low maintenance requirements, the perimeter edges on the door panels are bull nosed with a minimum radius of 8 mm. This prevents excessive wear on the edges.

High bumpers are also fitted to the door panel to further absorb impact from man-ridden vehicles and carts, as well as reduce stress on hardware and mount assemblies.

The patented ‘honeycomb’ framework and flexible urethane foam insulation give the door optimum stability and superior sound-proofing qualities. This characteristic makes the Apex SR 9000 the perfect choice for use in noise-sensitive areas such as hospitals, hotels, conference centres and restaurants.

In addition, the 3 mm ABS skin retains its physical properties down to temperatures of minus 40°C, making it ideal for walk-in



The Apex SR 9000 - the perfect choice for use in noise-sensitive areas such as hospitals, hotels, conference centres and restaurants.

cold rooms. The low maintenance skin is impervious to moisture, acids, petroleum products, animal fats, rodent, insects and salt solutions and is easily and quickly cleaned for rapid turnaround time.

Standard vision panels mitigate potential accidents occurring with the inclusion of

scratch-resistant and UBC compatible 3 mm clear polycarbonate sheeting, available in a number of custom sizes. For refrigerated areas, double panel vision panels can be installed.

“As with all applications, it is important to ascertain the optimum design ele-

ments for each customer's specific needs. Our extended team of agents throughout South Africa are available to offer technical and installation support that ensures longevity combined with productivity within any workplace environment,” Dessing concludes.

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Rand-Air supplies temporary compressed air and power to oil refinery shutdowns.

“DURING oil refinery shutdowns, thousands of subcontractors are hired to carry out the many maintenance procedures, many of which require temporary compressed air, power and other equipment” says Rudi de Vry, Rand-Air’s Area Manager in Durban. Over its 46 years of operation, Rand-Air has become the preferred rental equipment partner to South African oil refineries, including those in Durban.

absolutely free of contaminants - has created a very nice niche for us with the various refineries in the region. “Rand-Air’s Durban team works closely with the refinery to meet their safety obligations. “Before our equipment is delivered to a refinery site, there are a number of procedures we need to carry out on the units to ensure that our standards are aligned with those of our customer” he explains.

Turnkey containerised substation for DRC mine

INNOVATIVE and fit-for-purpose design was the winning formula that secured WEG Automation Africa, (formerly Shaw Controls,) the contract for a containerised substation and control room solution for a remote tin mine in the Democratic Republic of Congo.

According to Tyrone Willemse, business development consultant – projects and contracts at WEG Automation Africa, the isolated location of the mine and the challenging logistics made the modular solution ideal. The substations are each housed in a six-metre-high cube container. A total of 14 units were supplied, comprising MV rooms and LV rooms.

Willemse says. “The unit’s dimensions and robustness had to allow for a long journey, including along a very difficult 200 km road to reach the mine site.”

“Every part of the process plant has its own designated MCC that provides electrical power and control for areas including; the primary crushing circuit, the plant feed, regrind mill, tailings thickener, and the product dewatering and handling circuits.”

In addition to meeting safety compliance regulations, the design includes three-way locking systems, LED lighting, fire detection systems and a safety interlock to the fire system for air conditioners. Backup power supply is provided to all the exit lighting. To ensure easy cable entry, glanding plates were carefully located on the container’s support beams.

“Working in close collaboration with the engineering house, careful planning could be done upfront to ensure that nothing was overlooked,” Wil-

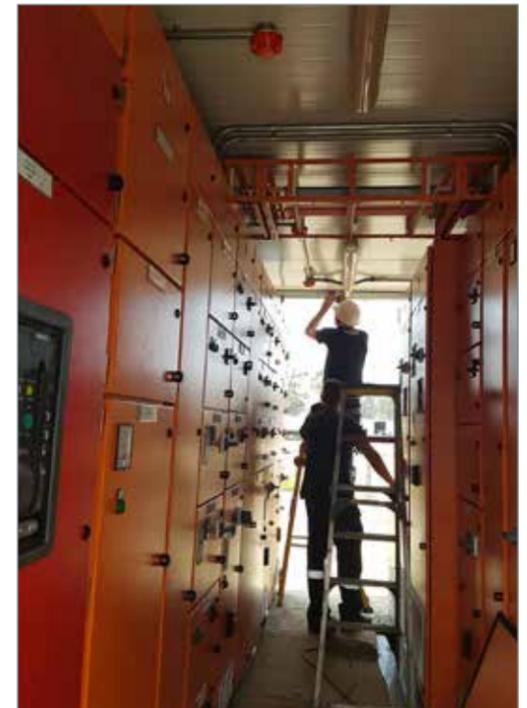
lemse says.

“In the design, full consideration was given to the placement of elements like platforms, walkways, doors, viewing windows and air conditioning units,” he says. “We also took responsibility for the logistics of getting everything to site.”

Willemse highlights that this turnkey solution demonstrated WEG Automation Africa’s containerised substation design and engineering capability, as well as its full local manufacturing capacity lifting it above other MCC manufacturers or assemblers.

The containerised solution comes with a full data pack, quality control documentation and an operation and maintenance manual in accordance with ISO9001.

“With our expertise, capacity and experience of working in Africa, we were able



Electrical installation in the Motor Control Centre 600 sulphide rougher float container.

to reduce the risk and turnaround time by tackling the entire contract in-house,” Willemse says. “The extensive testing and cold commissioning

enabled by our modus operandi and facilities also gave the mine peace of mind that the unit would function as required when it arrived on site.”

“...it was a case of ‘all hands on deck’...”

The Durban branch has recently completed just such a project, partnering with South Africa’s largest oil refinery during a shutdown which extended from 15 May until 15 July this year.

De Vry observes that with a small but highly motivated and efficient team in Durban, for Rand-Air during the refinery shutdown it was a case of ‘all hands on deck’, and extended working hours.

Recently, the Durban branch was pleased to be able to rent out one of the larger oil-free compressors in Rand-Air’s range to the same customer.

“Ironically, even though it was for an oil refinery, the customer required Class 0 oil-free air to keep its systems operational during a maintenance shutdown!”

“We have furthermore found that being able to supply Class 0 oil-free air - which is

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Demonstration bending of 100 mm mild steel pipe, accomplished in less than a minute!

New CNC tube bending machine demonstrated

AFRICA Projects Consultants (Pty) Ltd (APC), a 100% black-owned fledgling ship repair and ship building company is conducting a series of demonstrations of its recently acquired CNC controlled mandrel pipe-bending machine for the bending of tubes

and profiles made of mild, and stainless steels, aluminium and CuNiFe up to 16 mm wall thickness. This state-of-the-art machine, the first of its kind in Africa, bends pipes ranging from 40 mm to 140mm considerably faster than conventional welding and

pipe-bending methods. Managing Director of APC, Refaan Hendricks says, "The new machine will dramatically improve quality and reduce the time and cost involved in creating pipes with bends. Currently, fabricating bends in thick wall pipes involves manually

chamfering two pipes and an elbow, then welding them together – a process which can take almost a full working day, especially if integrity X-rays are required. Alternatively, pre-bent pipes can be imported which can be an expensive exercise. This technologically-advanced machine will not only increase the speed at which the pipe-bending and fabrication can be done, it will substantially increase the quality and reduce costs. The machine can achieve bending axis repeatability of +/- 0.2°, length repetition accuracy of +/- 0,5 mm and a rotation repetition accuracy of +/- 0.2°. It is amazing to see these thick-walled pipes being bent in a matter of seconds!"

The pipe-bending machine arrived at its Paarden Eiland premises in September and its R5,5-m cost was financed by an interest free loan by Damen Shipyards Cape Town (DSCT) as part of their Enterprise Supplier Development programme. APC launched the machine during the month of October and demonstrations are scheduled to various companies across various sectors that can benefit from its capabilities.

Although APC has only been in existence for eight months, it has expanded twice and is currently negotiating for yet larger premises. While having 150 years of specialised skills in providing turnkey ship repair solutions, workshop fabrication, industrial maintenance and project management, the new machine is expected to open doors to many other sectors where tube bending is required.

Taufeeq Phipps, Project Manager and co-founder of APC says, "The new machine will provide a competitive edge especially when servicing the marine industry where on-time delivery is a key driver for our clients. In addition, it will allow us to service other industries such as mining, refrigeration, manufacturing, food processing, automotive, chemical, agriculture, general industrial and construction.

"Our flexible approach allows customers to provide their own pipes for us to bend to their specifications, or we can source the pipe materials and bend to specifications and should they require installation on site, we can do that too!"

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Don't dump – it will cost you

The City's Anti-littering and Dumping Task Team will go out in full force to bring those who dump to book. If found to be on the wrong side of the law, repeat offenders could have their vehicles forfeited and/or receive fines and impoundment fees of up to R22 400. The dumping of rubble and other waste is strictly prohibited:

THE City of Cape Town's Law Enforcement Department, working closely with other City Departments such as Metro Police, Traffic Services, Solid Waste Law Enforcement, Water and Reticulation as well as Environmental Resource Management, will implement a zero tolerance enforcement programme that will send out a clear mes-

sage to stop dumping. The Integrated Waste Management By-law authorizes the City to seize and impound any vehicle used or involved in illegal dumping.

For July and August 2019, the Law Enforcement Department has issued at least 905 littering fines and 168 dumping fines. Officers have been enjoined to sustain and increase the enforcement of these contraventions.

"The City will follow a renewed and integrated approach to clamp down on those who illegally litter and dump waste in public open spaces, parks and city property. Illegal dumping has a serious effect on the natural and built environment and the City of Cape Town has the responsibility, on behalf of res-

idents, to protect the environment. Apart from destroying the environment, including contaminating subterranean and surface water resources as well as possible health risks, dumping can also damage city infrastructure, said the Mayoral Committee Member for Safety and Security, Alderman JP Smith.

The relevant by-laws enable the city to seize and impound vehicles used in dumping. The seizure and impoundment of vehicles involved in illegal dumping is used internationally and has proven to be an extremely effective strategy in deterring and preventing illegal dumping as well as ensuring the successful resolution and prosecution of such cases.

Those who intend to dump, should know that the seizure and impoundment of the vehicle used in dumping will be for the expense of the owner or the person holding or operating the vehicle. The vehicle will not be released unless the case is concluded and on receipt of the fees payable which include an impoundment fee;

- First offence R8 700.00
- Second offence R11 700.00
- Third offence R17 400.00

In addition to the above, the offender will also be issued with a fine to the amount of R5 000 for contravening the by-law.

Although illegal dumping is prevalent



across the metropole, the Task Team will identify certain hot-spots so as to improve operational efficiency. In this regard, the City's Law Enforcement Department will work closely with other City Departments.

"The efforts of the Task Team and the possibility of having the vehicle forfeited

should send out a clear message to those who intend to dump waste in unauthorized spaces. The impoundment and fines that will be issued will set an example that the City is serious in our efforts to keep the environment clean. We would like to request the public to assist Law Enforcement Officials

in reporting any illegal dumping activity so that the Task Team can act swiftly," said Alderman Smith.

Residents can report illegal dumping by phoning the city's call centre on 0860 103 089, the City's emergency number 107 (from a landline) or 0214807700 from a cell phone.

Multi-jackbolt tensioners can replace nuts and bolts



Although the primary benefit of Superbolt is the reduction of torque required, this device also reduces downtime and eliminates unsafe and laborious bolting methods, particularly in harsh operating conditions.

BMG's Superbolt® multi-jackbolt tensioners - part of the Nord-Lock range - are designed to reduce downtime and eliminate unsafe and laborious bolting methods, particularly in harsh operating conditions and in areas with limited working space.

"These multi-jackbolt tensioners, which replace or retrofit nuts and bolts, only require hand or air tools for the installation and removal of any size tensioner," says Maryna Werner, business unit manager, Fasteners division, BMG. "Bolts need to be easily removable during maintenance procedures, but must resist the loosening effects of vibrations and dynamic loads.

"This quick and efficient bolting method is based on a design which splits one big torque into a number of smaller ones. Superbolt, which has numerous advantages over conventional bolt-

ing products, ensures joints can be tightened with high accuracy, without the need for specialist skills or heavy tooling. Tightening in pure tension allows higher preloads on the same size bolt than conventional tightening methods.

"Generating a preload high enough above the separating forces means bolting will not vibrate loose on properly designed joints and the added elasticity increases fatigue life of the bolted joint, which eliminates costly downtime. Only small hand tools are required for installation - this means there are no safety hazards from immense hydraulic pressures, no pinching hazards, no lifting of large tools and no risk of sockets breaking under high pressure.

"Multi-jackbolt tensioners are easy to install, even in confined spaces and although there are multiple jackpoints to

tighten - by using hand or air tools - installation times are faster than other bolting methods."

A conventional bolting system, like the sledgehammer, gives little control, is inconsistent and can cause injuries. Thermal tightening, crane and hydraulic wrenching and hydraulic tensioning are often costly, inaccurate, time consuming and unsafe.

Superbolt devices are threaded onto a new or existing bolt, stud, threaded rod or shaft. The main thread serves to position the tensioner on the bolt or stud against the hardened washer and the load bearing surface. Once positioned, actual tensioning of the bolt or stud is accomplished with simple hand tools by torquing the jackbolts which encircle the main thread.

The jackbolts transfer the preload evenly into the main thread and consequently onto the joint. Jackbolts have a small friction diameter and can therefore create a high thrust force, with relatively little torque input. The main thread is tightened in pure tension.

Superbolt tensioners are used in diverse industries, including mining, hydropower, wind turbines, gas and steam turbines, nuclear, steel, shipbuilding, offshore, chemical and transportation. OEMs specify Superbolt multi-jackbolt tensioners in their design, to improve performance of equipment.

The high preload

capacity and accuracy of this system has resulted in the design of smaller bolt sizes. Compact dimensions and decreased tool-

ing sizes allow for a reduction in the size of machinery, reducing material and machining costs.

BMG offers a tech-

nical advisory service to determine the dimensions and load conditions of existing or required bolted joints. Current tighten-

ing methods are evaluated and bolt preloads, for absolute reliability and durability, are calculated by the highly-skilled team.

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Eight facts about surge and lightning protection

1. Protect all inputs and outputs

When using a surge protection device, protecting all input and outputs of your equipment is crucial.

A surge can come from any copper line running into your home, so make sure to protect your telecommunications and data connections, not just your power connection.

If you're protecting your TV, make sure to protect incoming lines from your satellite dish or aerial as well.

Try getting a unit that has all these inputs and outputs in one device, thus your installation is referenced to one unit and protection can be guaranteed.

2. Save some money?

Some routers may come with a protection unit, or cheaper surge protection models are

available from large stores and manufacturers.

3. A warranty...on your stuff

Some manufacturers like Clearline offer a connected equipment warranty of up to R25 000.

So if lightning hits and the surge protector didn't work, they will replace your equipment to the value of R25 000.

4. A UPS won't help against a lightning surge

It is a common misunderstanding that a UPS (Uninterrupted Power Supply) will provide sufficient lightning and surge protection. Unfortunately, this is not always the case.

Consumers should be very careful and aware of the protection capabilities of their UPS device.

5. Under voltage hurts

A brownout is a partial loss of power similar to a blackout, but with less intensity, which may cause lights to flicker, or electronic devices to turn on/off spontaneously. This can cause damage to sensitive electronic equipment.

Clearline has selected devices with their patented Trip-Connect Technology that offer disconnection on over-voltage (surges, etc.) and under-voltage (brown outs).

6. Always get more outlets than you need

You're always going to need more outlets, and you'll undoubtedly add more gear, without necessarily getting rid of your current gear.

Plugging additional standard multiplugs into your surge protector could compromise warranties and protection.

7. USB is great, but check the amps

Purchase a surge protection device with USB connections, so you can charge your mobile devices.

This is handy, for sure, but check the output amp rating.

Generally, you would want this to be more than the standard 0.5A charger we get from our devices. For most mobile devices, 1 A is enough and will charge quicker and safely.

8. Multiplugs are portable

Most hotels or even conference and training centres normally won't have surge and lightning protected outlets.

Taking your multiplug along gives you peace of mind and some additional plug points, and could offer direct USB charging (depending on your product).

Bottom Line

South Africa has lots of thunderstorms and unfortunately an unreliable power provider, so your gear is probably more likely to experience power surges and possible damage.

Even appliances are susceptible to power spikes, so there really is no reason not to get a proper surge and lightning protector.

Clearline is offering MyBroadband users a 10% off coupon on all on-line purchases from there website.

This includes protected multiplugs with USB chargers, ADSL protection, plugs for home appliances, home entertainment and DSTV systems, with R25 000 warranty on selected products.

This article was published in partnership with Clearline.

Extra-heavy vehicle launched

DAEWOO Trucks, the Korean commercial vehicle manufacturer that is wholly owned by Indian multinational conglomerate Tata Group has launched an extra-heavy truck, the Maximus KL3TX at Futuroad, the truck and bus expo co-located with Automechanika Johannesburg at the Expo Centre.

Daewoo Trucks has been in South Africa for 15 years, but for now will concentrate only on the extra-heavy segment of the market so there is no conflict between Daewoo Trucks and TATA commercial vehicle models. The current vehicle parc of Daewoo Trucks in South Africa is estimated at about 6 000 units.

The Maximus uses the tried and trusted combination of a 480 hp Cummins engine which produces 2 509 N.m of torque with either an Eaton or ZF AMT transmission and an Eaton rear axle.

Len Brand, the CEO of Tata Africa Holdings says he is satisfied that having Daewoo Trucks concentrate on the top end of the local market will contribute to further growth for Tata International in Africa. Market share was 3.5% last year and it should improve to 5% this year and Brand says he now has the product and model mix to grow sales despite the tough market conditions which currently prevail in South Africa.

Daewoo Trucks sales in South Africa are expected to reach approximately 200 in 2019, with a target of 500-600 units a year in the future. These trucks are sold in 11 other African countries and are locally assembled in South Africa and Kenya.

Brand, who has been



Len Brand.

instrumental in the turnaround of Tata in Southern Africa for the past three years, says his team is now focusing on after-sales backup through its 91 2S (service and spare parts) outlets in South Africa and a further 60 in Africa.

He added that the company was well advanced in setting up its own financial arm to assist customers buying Tata and Daewoo commercial vehicles. A pilot operation in Tanzania is already proving successful.

There are currently 30 3S (sales, service and spare parts) dealerships in South Africa. The Tata Africa CEO says that the company presently operates the dealership in Samrand, Polokwane and Nelspruit but is working to assist these operations to become partnerships with local involvement.

All aspects of training are also high on Len Brand's agenda with highly experienced Willie van Zyl having been appointed as Group Training Manager to oversee this important aspect of the business.

"We have made good progress in growing Daewoo Trucks sales over the past couple of years and I am confident that the new models and a big push on brand awareness will bear fruit in the near future," concluded Brand.

Qhubeka celebrates

Continued from P1

UK (Qhubeka UK), and a fully-fledged bicycle manufacturing subsidiary, Real Bicycle Co. (RBC).

"One of the key reasons for our success has been the far-reaching vision that Anthony had," says Phaweni. "He has always spoken about the need to touch millions of people's lives. That's still our mission. We started by providing children with bicycles through our learn-to-earn programmes, helping them to travel faster and further, and to carry more. This means they can get to and from

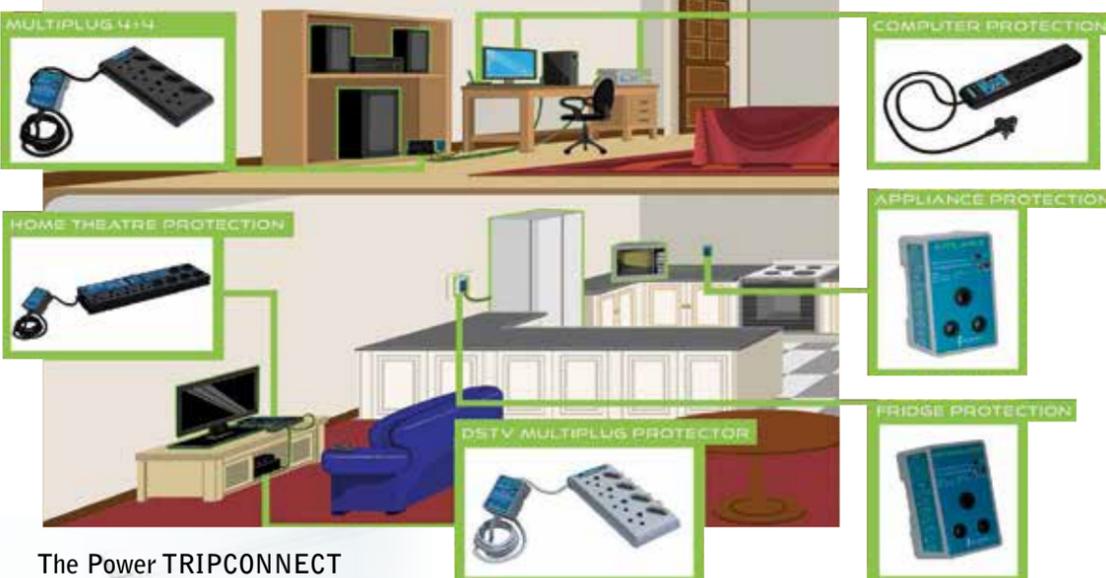
school in a third of the time (as compared to walking), carry their school supplies more easily, and enjoy more time in their day for homework, sport and play."

Another important development along Qhubeka's journey has been moving from sourcing its bicycles to manufacturing them via RBC. This allows the organisation to support job creation and enterprise development in Southern Africa, as well as giving it oversight and control of its full supply chain.

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Choosing between IFRS and IFRS for SMEs

By **Wiehann Olivier**,
Partner at Mazars

OVER the last few years we have seen various changes being made with regards to the IFRS (International Financial Reporting Standards) accounting framework, which includes new standards such as IFRS 15 (Revenue), IFRS 9 (Financial Instruments) and IFRS 16 (Leases), replacing the old IAS 18, IAS 32 and IAS 17, respectively. These changes may seem like a mere modification in abbreviations, that you can leave your accountant and auditor to worry about, but in actual fact, they have had a significant impact on all companies that

elected to adopt IFRS as their accounting framework.

The new revenue and financial instruments accounting standards under the IFRS accounting framework has become effective for all entities with a financial year starting on or after 1 January 2018, while the new leases standard is applicable to all entities with a financial year starting on or after 1 January 2019. Without going into too much detail regarding the disclosure and accounting requirements, the effect of the new standards have been found to be onerous and overly complex by most people who have dealt with these new accounting and disclosure require-

ments. Most companies in South Africa, aside from listed groups, struggle to see the benefit of these new standards and why they need to be adhered to.

The question is therefore raised as to why one would apply the IFRS accounting framework and what the alternatives would be. The South African Companies Act requires a company to compile its financial statements in accordance with an acceptable accounting framework, the options for which include either IFRS, IFRS for SMEs (International Financial Reporting Standards for Small and Medium-sized Entities) or a financial framework determined by the company (entity

specific accounting policies). The most common of these are IFRS or IFRS for SMEs as very few companies apply entity specific accounting policies for various reasons.

There is a general misunderstanding as to when a company needs to apply IFRS, and when it is able to apply IFRS for SMEs. The PIS (Public Interest Score) of a company is calculated by taking a number of factors into consideration, such as the number of individuals with beneficial interests (i.e. shareholders), turnover for the financial year, third party liability at the end of the financial year and the average number of employees. The general misunderstanding is that

the application of the accounting framework is dependent on the company's PIS, which is not the case. In terms of the Company's Act a company only needs to apply IFRS if the company is a state-owned company as defined by the Act or if the company is a public company listed on an exchange such as the JSE or AltX for example, all other companies are able to apply IFRS for SMEs.

Before a change is made to the accounting framework of a company, other considerations should also be applied such as whether the MOI (Memorandum of Incorporation) requires a specific accounting framework and also whether there are any requirements

from the shareholders in terms of the accounting framework that should be applied. The company might form part of a group of companies that apply IFRS and therefore it is required that all of the companies within the group apply the same accounting framework to make the consolidation or aggregation process more efficient and accurate.

There are various entities that are able to apply the simpler and less onerous financial reporting framework of IFRS for SMEs. Besides the fact that IFRS for SMEs is less complex and onerous, proper consideration should always be given prior to making a decision about changing the accounting framework.

There are significant differences between the above mentioned frameworks, and each has pros and cons that need to be carefully assessed.

It is unlikely that smaller groups and owner managed business will see any value in the complexity and additional disclosure requirements that the new IFRS standards bring along. As such, the increase in audit, consultation, tax and compilation fees can be avoided by making the change to IFRS for SMEs. However, it is very important that an assessment is made by the shareholders and directors of the company, in consultation with its auditors, so that an informed decision can be made.

Sandown Road, Malibongwe Drive upgrade on track

Nearly a year ago, the City of Cape Town, in partnership with Milnerton Estates and Garden Cities developers, commenced with the dualling of Sandown Road and Malibongwe Drive up to the Potsdam interchange.

THE project is making good progress and is scheduled to be completed by July 2020.

The developer, Milnerton Estates, is funding the bulk of the costs for the construction of Sandown Road and Malibongwe Drive, as well as the upgrade of the Potsdam interchange.

Garden Cities, another developer, is undertaking the bulk of the funding for the section from Sunningdale Drive to Parklands Main Road.

The City is contributing approximately R66 million (excluding VAT) to these improvements and the Western Cape Government is involved in the implementation of the Loop Ramp onto the N7.

Work that has been completed so far includes:

- Sunningdale Drive to Malibongwe Drive (M12): The road layer-works and kerbs installation on this section have commenced. The side roads being Braselton Road, Whitehall Way, Passerina Road and Wood Drive will be closed for longer periods in the near future to facilitate the construction of the new intersections.
- Bridge over the existing railway

line: The erection of the bridge superstructure is nearing completion, and the bridge deck is in the process of being completed.

- Sandown Road to the N7/M12 interchange: The work on Malibongwe Drive is progressing well although the contractor experienced delays as a result of the protest action. The culvert crossings have been completed and the kerbs are being laid between Parklands

Main Road and Potsdam Road. The layer-work to the slip lanes from Potsdam Road onto the N7 Bridge is being constructed.

- Upgrade of the N7/Malibongwe Drive (M12) Potsdam interchange with a loop on-ramp in the north-eastern quadrant: Construction has commenced.
- Relocation of a sewer pipeline and water main: The relocation of the underground services between

Sandown Road and Parklands Main Road is progressing well with only minor traffic disruptions being experienced. The last section of the sewer pipeline crossing Sandown Road at Sunningdale Drive is being installed by pipe-jacking to ensure that traffic disruptions are minimised.

“One of our key objectives is to implement targeted pro-



grammes to reduce congestion and this project speaks to that. I am happy to note the progress made thus far. Once completed,

it promises to assist in the alleviation of traffic congestion in the worst affected parts of Cape Town.

The traffic flow

along Sandown Road will also improve,” said the City’s Mayoral Committee Member for Transport, Alderman Felicity Purchase.



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Passive fire safety

THE creation of “fire compartments” and passive fire protection in a building is essential for containing a fire and preventing it spreading, at the same time providing a valuable time cushion to enable evacuation of the occupants of the building and time for emergency services to reach the scene and bring the still-manageable blaze under control.

Passive fire protection products are the primary materials included in the construction of a building. By correctly applying these products, the fundamental and legal requirements of compartmentalisation can be met. Additionally, they contribute to the structural stability of a building. Passive fire protection limits the



Fire Protect PU Foam used to seal ducts and cable trays.

spread of flames and smoke, which also limits the transfer and spreading of fire between fire compartments.

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Known as FireProtect®, this patented range of products, available in either a silicone, acrylic, or hybrid sealant as well as expansion foam, is applied to joints and gaps such as window frames, ducts, cable trays, doors and cornices as well as linear joints during their installation in the finishing stages of construction. Each of these specialised products can have fire retardancy of up to four hours and international fire certifications.

For further technical specifications and fire certifications please go to www.denbraven.co.za for the technical data sheets, or call the Den Braven sales team for technical assistance: 021 552 9674. Or email sales@denbraven.co.za

New range of mechanical vapour recompression fans

TLT-Turbo GmbH, a global ventilation fans and systems manufacturer, has launched a new range of mechanical vapour recompression fans, with ceramic hybrid bearings that provide an exceptionally long operational lifespan. Integrating the latest ventilation technologies, this fan offers numerous advantages regarding performance efficiency, minimal maintenance and high reliability.

The TLT-Turbo fan for mechanical vapour recompression (MVR) has been in development since 2012 since the first case studies were carried out. Following intensive discussions with clients, TLT-Turbo established that a need existed for low maintenance MVR fans. This was followed by four years of intensive research, product testing and consultations with clients. The first MVR fans were rolled out in 2016 while continual product improvement has remained a focus area for TLT-Turbo.

According to Mario Schmidt, Head of TLT-Turbo Global Vapour Fans business segment, the features of TLT-Turbo's MVR fan, such as the lower maintenance requirements and the introduction of hybrid ceramic bearings, underscores their commitment to developing



The new TLT-Turbo fan for Mechanical Vapour Recompression.

products in close alignment to their clients and their needs, and also speaks to TLT-Turbo's key objective for continual innovation.

The implementation of hybrid ceramic bearings is a key differentiator of the TLT-Turbo MVR fan. “Our clients are amazed by the possibility of a hybrid bearing operating at high speed without circulating oil. Conventional roller bearings do not provide the required support for operating the fan in a broad operational speed range without running into harmful resonance frequencies (under critical operation). Thanks to continuous enhancement in recent years, especially through the use of ceramic materials, more effective roller bearings are available today. The use of hybrid bearings with steel rings combined with ceramic rollers has been established in many

industrial applications and in the case of the TLT-Turbo MVR fan, hybrid ceramic bearings mean significantly lower maintenance requirements and better operational performance,” Schmidt explains.

The hybrid ceramic bearings used in TLT-Turbo MVR fans are life time greased and can be operated for up to 10 years without requiring maintenance. To enhance this benefit for clients, TLT-Turbo introduced an additional device to the fan's design that allows for the bearing to be re-greased from the outside in order to further simplify maintenance and to increase the fans' service life.

High motor speeds, a wide range of optimized impellers and the allowance for high temperature and pressure increases complement the lifetime greased hybrid ceramic bearings to ensure that clients benefit from the enhanced performance and efficiency that they have come to expect from TLT-Turbo products. These factors allow for operation of the fan below critical speed which ensures both reliability and safe operation.

“Reliability and safety are key concerns for our clients and TLT-Turbo has addressed this in the MVR fan by using high quality components. Thanks to the use of the hybrid bearings, no oil supply or oil pump is necessary which means that no oil can contaminate the product. In addition to this, the fan also features temperature and vibration monitoring and remote monitoring of the bearing is possible as well. Our entire manufacturing process is carried out according to all major quality standards, including DIN ISO 9001,” says Schmidt.

The TLT-Turbo MVR fan is suited to numerous applications in the chemical, pharmaceutical, waste water treatment, and the organic natural product production industries as well as in the food and beverage process and manufacturing sectors.

Appointments

INDUSTRIAL equipment group Goscor Group has announced that **Brian Rachman** will move into the role of National Operations Manager for both the Bobcat and SANY brands. In addition, **Kevin Purcell** will assume the role of National Sales Manager, taking over the management of the sales team.



Brian Rachman (L) and Kevin Purcell.

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Shipyard joins WISTA

DAMEN Shipyards Cape Town has joined the Women's International Shipping & Trading Association (WISTA) in South Africa. The yard is represented in the Association by Transformation and ESD Manager Eva Molo.

WISTA is an international networking organisation whose mission is to attract and support women, at the management level, in the maritime, trading and logistics sectors.

Transformation and ESD Manager Eva has been nominated to WISTA South Africa's Executive Committee as the Cape Town Chapter Representative.

Eva said, "It is an honour to be nominated to serve on the Executive Committee of WISTA South Africa as the Cape Town Chapter Representative. Along with my fellow members I look forward to playing my part in developing our chapter, growing and diversifying its membership and engaging on workplace inclusivity and equality – subjects of crucial importance for the South African maritime industry."

Damen Shipyards Group Head of Com-

munications and President of WISTA the Netherlands Sylvia Boer said, "I would like to extend my congratulations to WISTA South Africa on their recent relaunching and wish them every success in their stimulation of workplace equality in the country's maritime industry. I am pleased to see DSCT supporting these aims. International inclusivity in the workplace is high on Damen's agenda and forms a significant part of our alignment of operations with the UN Sustainable Development Goals."

Workplace inclusivity is a subject close to the heart of Damen Shipyards Cape Town. It is the yard's aim to give all its employees the opportunity to develop their skills – both personal and professional – to their full potential.

WISTA South Africa was recently relaunched, bringing the total number of National WISTA Associations to 46 – four of which are located on the African continent. The relaunched Association currently focuses on Cape Town, but is planning to expand its activities to Durban and Port Elizabeth in the future.

First South African-owned chemical tanker



NDUNA Maritime and Sasol have entered into a R400 million enterprise and supplier development (ESD) funding agreement through the Sasol Siyakhha Trust, in South Africa's first locally-owned maritime vessel. This is Sasol Siyakhha's single largest funding agreement to date.

The specialised chemical tanker, named Bow Cecil, is the very first Republic of South Africa flagged vessel that will transport chemicals to international markets registered to carry the South African flag.

Sasol spends approximately R1.8 billion a year on shipping from South Africa to global markets. As the owner

of Bow Cecil, Nduna Maritime will leverage this asset to increase its capacity to ship more chemical products to markets concentrated in Asia. To date the Sasol Siyakhha Trust has disbursed R426.7 million since 2007 to 91 Small, Medium and Micro Enterprises (SMMEs).

Mazibuko added, "We believe that through this ground-breaking project, we have heeded the call to address the aspirations of our government's National Development Plan by increasing investment in the country's ship registry as well as by creating an enabling environment for the improvement of human capital and skills development in the sector."

First world problems

South African talent building a business that gobbles up foreign currency 'leftovers'

ARE you among the thousands of world travellers wondering what to do with your foreign currency 'leftovers' following an international holiday or business trip? You are not alone. An article published by UK-consumer website thisismoney.co.uk estimates that GBP2.5 billion of foreign banknotes and coins enter the UK each year.

Busy executives and mid- to high-income families cannot be fussed to convert a fistful of Indian rupees, Norwegian krone or Thai baht to hard currency because the 20 dollars, euros or pounds they might retrieve via the exchange is insufficient to compensate for the inconvenience of queuing at a bureau de change, let alone to cover the costs. The result is that only one in two travellers bother to travel small denomination banknotes – the bureau's will not even consider coins – when they return

to the UK. Much of this money ends up in desk drawers and similar receptacles at homes and offices countrywide.

Traditional foreign currency exchanges shunned low denomination banknotes because it was costly and time consuming to process under their labour-intensive business models. Their reluctance to chase this segment of the market created an opportunity for Fourex, a multi-currency exchange solution, to disrupt the market. Fourex was the brainchild of two UK-based South African entrepreneurs, Jeff Paterson and Oliver du Toit, who were frustrated by their inability to repurpose the coins they collected on their extensive foreign travels. At one stage Du Toit estimated he had hundreds of dollars of foreign currency stored in jars. The pair undertook to build a solution that could recognise and exchange banknotes and coins from multiple

countries.

A few years – and almost GBP1 million of their own funds later – they had developed the software and image database necessary to recognise thousands of derivatives of banknotes and coins from hundreds of countries. The Fourex concept gained widespread acclaim after it won Virgin Media's 'Pitch to Rich 2015' competition under the 'New Things' category. Fresh from this success the duo turned to the popular crowdfunding platform (www.crowdcube.com/fourex) to see if the consumer market would back the idea with hard cash. They were not disappointed and eventually raised GBP670 000 – more than double their target – in just five days. This funding cleared the way to open their first kiosk at a London underground in November 2015, with plans to grow their kiosk network to 80 sites by the end of 2019 (67 locations were

active at the time of going to print). Fourex recently kicked off a second round of funding to raise an additional GBP900 000 to meet its growth targets and add to its high footfall locations at underground stations, major shopping centres and airports.

Fourex demonstrates that innovative businesses do not have to trade in technology to make money. Their success hinges on using technologies introduced by the fourth industrial revolution (4IR) to reinvent 'old school' business methodologies. A kiosk is nothing new; but a kiosk that that uses a combination of high speed image recognition software and a database of some 3.5 million images to process up to 300 coins per minute sits squarely in the digital age. Technology makes it possible for each Fourex automated self-service kiosk to convert some 150 foreign currencies (including out

of circulation notes and coins) into dollars, euros or pounds supported by a real-time pricing solution. 4IR empowers entrepreneurs to pursue segments of the market that were previously dismissed (or ignored) as unprofitable and unsexy – and enables them to introduce the benefits of scale far earlier in the business cycle.

Changing consumer behaviour is another important component of the shifting technology landscape. Today's digital natives are just as comfortable with a transfer to a digital wallet as they are with pocketing a wad of paper money. This introduces further savings insofar stocking and servicing the Fourex kiosks. Millennials and subsequent consumer generations are also more socially conscious than before, thus welcoming the real-time opportunity to donate their excess foreign currency to charities of their choice.

Jobs – the good, the bad and the ugly

NUMBERS released by Statistics SA show a decrease in construction jobs over the past months, while the mining sector is steadily employing more people.

The Quarterly Employment Statistics survey for the second quarter of the year showed that almost

10.2m people were employed in the second quarter, 2 000 fewer than in the first quarter of the year – but 141 000 more than a year ago.

In the past quarter to end-June alone, 16 000 jobs were lost in the construction sector – there are now 30 000 fewer workers

in the construction industry than a year ago.

But community services (including civil servants, health workers as well as part-time workers for the elections this year) and the mining industry reported increases of 44 000 and 3 000 jobs respectively over the past quarter.

Parts of the mining industry have benefited from stronger resource prices, particularly platinum and gold.

However job cuts are looming: Sibanye-Stillwater, the biggest SA gold producer and the largest platinum miner in the world, may retrench almost 6 000 workers,

while steel producer ArcelorMittal SA is also planning 2 000 retrenchments.

The manufacturing industry saw a sharp 15 000 drop in jobs in the past quarter compared to the first quarter of the year. It employed 1 000 fewer people in June 2019 compared to June 2018.

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Hydrogenics strengthens Cummins' fuel cell capabilities - adds new hydrogen production tech

CUMMINS Inc. has announced that it closed on the previously announced acquisition of fuel cell and hydrogen production technologies provider Hydrogenics Corporation.

"We are thrilled to welcome the Hydrogenics employees to the Cummins family," said Tom Linebarger, Chairman and CEO, Cummins Inc. "Hydrogenics is one of the world's premier fuel cell and hydrogen production technologies providers, and their expertise and innovative approach will strengthen Cummins' fuel cell capabilities. This is another step forward as we continue to invest in a broad range of clean, fuel-efficient, and high-performing products and technologies that deliver value to our customers."

Cummins began developing its fuel-cell capabilities more than 20 years ago. The acquisition of Hydrogenics with Air Liquide's support accelerates Cummins' ability to further innovate and scale hydrogen fuel cell technologies across a range of commercial markets. Owning both fuel cell and hydrogen generation from electrolysis capabilities will enable the company to

offer a full, differentiated hydrogen solution, from start to finish, integrated seamlessly for customers.

"Air Liquide and Cummins have a shared vision of the key role that hydrogen plays in the energy transition. As a shareholder, and more widely as a company, Air Liquide is highly supportive of a hydrogen-based society," said Pierre Etienne Franc, CEO, The Hydrogen Company. "The two global companies, leaders in their sector, have complementary expertise in the development of hydrogen energy. Thanks to Cummins' investment, we believe Hydrogenics' technologies will be able to accelerate their development significantly."

Hydrogenics will report under Cummins' Electrified Power Business Segment, led by Thad Ewald, Vice President - Corporate Strategy, and its operations will continue to be headquartered in Mississauga, Canada. Founded in 2018, the Electrified Power business designs and manufactures fully electric and hybrid powertrain systems along with innovative components and subsystems to serve

commercial markets as they adopt electrification. To date, the business has introduced complete electrified powertrain solutions in six markets across seven applications and continues to launch market leading products with customers across the world.

The acquisition was completed for \$15.00 per share, representing an enterprise value of approximately \$290 million. It follows the approval of Hydrogenics shareholders, the receipt of approvals from the Ontario Superior Court of Justice, and satisfaction of other customary closing conditions. Air Liquide will own approximately 19 percent of the company while Cummins maintains an approximately 81 percent ownership and will fully consolidate the entity in its financial statements. Hydrogenics will be delisted from the Toronto Stock Exchange and the NASDAQ upon receipt of the final required approvals.

Cummins continues to project that the company will return 75 percent of operating cash flow to shareholders this year in the form of dividends and share repurchases.

50 year celebrations – 'on course'

AIR PRODUCTS invited key customers and distributors to a prestigious golf day at the Glendower Golf Club in Edenvale on 18 September 2019 as part of the company's 50th birthday celebrations. Golfers received special treatment during the entire day and won great prizes. More importantly, it was an opportunity for guests and key Air Products employees to relax and enjoy some time outside the office and meeting rooms. During the prize giving ceremony, Managing Director, Rob Richardson thanked customers and distributors for their loyal support over the years. He em-

phasised the fact that the company is currently one of the largest suppliers of industrial gas in Southern Africa, which is largely as a result of their loyal support. Richardson further highlighted that Air Products has managed to build a reputation for its innovative culture, operational excellence and commitment to safety, and the environment, resulting in the company being able to manufacture and supply products of the highest quality for 50 years. Richardson concluded by saying: "I am honoured to be the MD as we celebrate this milestone in Air Products' proud history – it



The winning four-bal: L – R: Clayton Tree (Special Steels), Ismail Abdul (Special Steels), Marco Steyn (Horizon Global), Jason Allen (Horizon Global) and Rob Richardson (Air Products).

is such an achievement for the company to have shown the growth and experienced the successes that we have celebrated over the years. Our aim with this event was to thank

our customers and distributors for the role they have played in our business and to commit to providing an even better service and secure supply of gas in the future".

Senegal enters the LNG race

SENEGAL, where oil was discovered in 1961, expects all its offshore projects to come online between 2022 and 2026. According to the International Monetary Fund, between 2014 and 2017, oil and gas reserves worth more than 1 billion barrels of oil and 40 trillion cubic feet of gas, most of it shared with Mauritania, were found. Two large fields in Senegal are currently being developed - Australia's Woodside Energy is developing the SNE field and BP/Kosmos Energy the Greater Tortue Ahmeyim project.

Full speed ahead for Tortue

BP took the final investment decision (FID) on the Mauritania-Senegal FLNG plan late last year. The Greater Tortue Ahmeyim LNG project will produce around 2.5 million tons per year, with first gas expected in 2022. There are expansion plans for a hub on Yakaar-Teranga and one on Birallah. The Orca well, which is expected to be spudded in October, would go to supporting the Birallah hub and the first phase will provide domestic gas and data for the producers. Senegal launched a development

plan in 2014, with Kosmos saying gas from the offshore fields would go to supporting this.

In September Kosmos Energy and its partners BP and confirmed that the Yakaar-2 appraisal well has encountered approximately 30 metres of net gas in a similar high-quality Cenomanian reservoir to the Yakaar-1 exploration well, continuing the 100 percent success rate of wells targeting the inboard Mauritania/Senegal gas trend.

SNE Deepwater Oil Field

The SNE Deepwater Oil Field is located in

the Rufisque, Sangomar and Sangomar Deep Blocks, which cover a combined area of 7 490 km² within the Senegalese portion of the MSGBC Basin. The field is one of the world's largest oilfields discovered in the last decade and is being developed in a joint venture between Cairn Energy (40%), Woodside Energy (35%), FAR (15%) and Petrosen (10%), with Woodside Energy the project operator.

The planning is for the field to be developed through a stand-alone Floating Production Storage Offloading (FPSO) vessel facility with a capacity of around 100 000 bopd, with 23 subsea wells and supporting subsea infrastructure. It will be designed to allow subsequent SNE development phases, including options for gas export to shore and for future subsea tie-backs from other reservoirs and fields.

Licensing round

Senegal has announced a second licensing round that was due in late October but has now been delayed because of internal political issues until the first day of the Africa Oil Week conference in Cape Town. The new licensing round will be open for six months and will seek developers for ten to twelve offshore fields. This year's event in Cape Town will provide a great opportunity to learn more about Senegal and its opportunities in the next licensing round with Hon Mouhamadou Makhtar Cissé, Minister of Petroleum and Energy Senegal and Joseph Medou, E&P Director, Petrosen both speaking at the event.

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Refrigerant recovery and reclamation

A-Gas South Africa, supplier and lifecycle manager of speciality chemicals, is taking the lead in preventing the venting of refrigerants into the atmosphere, which not only damages the ozone layer, but contributes to global warming.

The company is achieving this through its association with Rapid Recovery of the US, which it acquired in 2016. The company is the largest refrigerant recovery company in the world. "We recover more refrigerant than any other single company globally," Rapid Recovery MD Adam Dykstra reveals.

"Anywhere there is a regulatory compliance for a contractor, or a demand for such compliance from a customer, there is a need for high-speed refrigerant recovery solutions," Dykstra explains. He adds that the recovery equipment available to contractors today is off-the-shelf and bulky.

"We offer a service that essentially encompasses both a technical, compliance and legal solution. We not only assist contractors in complying with the law, but also give their own customers peace-of-mind that they are dealing with professionals well-versed in the latest technology and trends."

One of these latest trends is the A-Gas Rapid Recovery service, which offers contractors the latest equipment. "Our machines are based on the simple concept of a compressor and a condenser. It basically recovers refrigerant from one unit to another really fast, in order to prevent it from venting to the atmosphere."

"SANS 10147 regulations have specific refrigerant recovery, tracking, handling, and documentation requirements. A-Gas Rapid Recovery provides all necessary documentation electronically to clients," A-Gas South Africa National Sales Manager Michael Labacher explains.

"Rapid Recovery is performed by us, while the contractor team can utilise its specialised skills to diagnose and repair the equipment, rather than handling empty and full recovery cylinders, and waiting on traditional recovery equipment. Custom-made petrol-operated machines are typically ten times faster than a contractor's 'buzz box' (recovery machine)," Labacher elaborates.

Commercial Refrigerant Solutions (CRS) of Johannesburg recently used the Rapid Recovery high-speed refrigerant recovery

solution from A-Gas South Africa on a range of major projects. CRS MD Stephen Spence explains that, while Woolworths has been a long-standing client, it has subsequently expanded further into the supply-chain industrial market over the past decade.

Upgrading a Woolworths store, for exam-

ple, to a CO₂-based system, or one based on the latest refrigerant, requires that any existing refrigerant gases be removed first, which is where A-Gas South Africa's Rapid Recovery service comes into play.

"Our equipment recovers refrigerant ten times faster than traditional systems on the market, at a rate

of about 500 kg to 700 kg per hour," Labacher reveals. This recovered refrigerant is packaged safely in cylinders, and then sent for reclamation, whereupon a compliance certificate is issued. This certificate is the end user's guarantee and proof that the recovered refrigerant was handled in an environmentally-

responsible manner.

Another benefit for CRS is that A-Gas South Africa has the necessary fully-qualified technicians to carry out its Rapid Recovery service, which not only facilitates the entire process in a professional manner, but assists in mitigating the risk for the company at the end of the day.

"Ultimately, the proper recovery and reclamation of refrigerants is of major benefit not only to industry, but to South Africa as a whole, which is a key element of important greenhouse gas reduction frameworks such as the Montreal Protocol and the Kigali Amendment," Labacher concludes.



A-Gas Rapid Recovery machines are based on the simple concept of a compressor and a condenser.

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Misapplied flame arresters can be a major safety risk

By HP van Huyssteen,
project manager at
Energas Technologies

WITH incorrect flame arresters installed, petroleum storage tank terminals and refineries may be exposed to major explosion hazards. The very nature of these facilities indicates that flammable mixtures may be encountered very often or even continuously in some areas. A small spark or lightning strike igniting a flammable mixture can have devastating consequences.

Flame arresters are devices designed to stop flame propagation, but they may vary greatly in their design and degree of protection. Flames may be divided into three categories, each with its own set of characteristics. Unconfined deflagrations occur if an unconfined vapour cloud is ignited. The flame will rapidly travel through the vapour

cloud, but at sub-sonic velocities.

Secondly, a confined deflagration occurs if a flammable mixture in a piping system is ignited. The flame travels at sub-sonic velocities, but will continue to pick up speed as it travels along the piping system. A pressure wave, also increasing in magnitude, precedes the flame. Lastly, a confined detonation is defined as a flame front travelling at sonic velocities and the pressure wave in front of the flame has transitioned to a shock wave.

Understanding deflagrations and detonations

The characteristics of flames travelling down piping systems have not been understood for many years. Deflagrations travelling sufficiently far down a piping system will turn to detonations and their velocity and pressure will stabilise in a smooth straight



Flame arresters act as heat sinks by partitioning the flame into tiny flamelets and quenching the tiny flames.

pipe. A detonation travelling along a pipe at a stabilised velocity and pressure is termed a stable detonation. Stable detonations are characterised by much higher velocities and pressures than deflagrations; as a result a stable detonation is more difficult to stop than a deflagration.

More importantly though is that when a deflagration changes into a detonation it goes through a transition phase during which time the flame front reaches a veloc-

ity and pressure that is much greater than that of a stable detonation. During the transition phase, a detonation is termed an unstable or overdriven detonation. Consequently, it is more difficult to stop an unstable detonation than a stable detonation. Pressures experienced during an unstable detonation may reach in excess of 100 bar.

The transition

The transition from a deflagration to a deto-

nation may typically occur within 50 pipe diameters from the source of ignition. For some precarious fuels like hydrogen, the transition can start in as little as 30 pipe diameters from the ignition source. In complex piping systems with many bends and junctions, flame propagation may occur differently and unpredictably.

A flame will accelerate differently around a pipe bend than along a straight pipe. It is still extremely difficult to predict where the deflagration to detonation transition will occur.

It is this transition phase that was not well understood, but is still difficult to predict how far from the source of ignition it will occur. In the past, design engineers may have believed that they had designed adequately by specifying standard stable detonation arresters.

If an unstable detonation hits a stable detonation arrester the flame may pass straight through it. In accordance with ISO 16852 (a standard written for the performance requirements and limits of use of flame arresters) stable detonation arresters require additional protection measures.

Understanding flame arresters

Flame arresters act as heat sinks by partitioning the flame into tiny flamelets and quenching the tiny flames. A flame arrester element will typically consist of a matrix of small holes of a controlled maximum diameter. The maximum experimental safe gap (MESG) is a standard measurement of the maximum distance between two heat absorbing materials through which a gas flame will not pass. The MESG is different for different types of flammable gases. Flammable gases are classified into different groups and the groups each have a maximum MESG. Higher operating pressures and temperatures in the vapour piping system will make it more difficult to stop a flame. Thus, not only are flame arresters classified by the type of explosion that they can protect against, but also the type of gas (gas group) and operating conditions.

Unstable detonation arresters, when used within their gas group and permissible operating conditions, have no limitations on

their location within a piping system. They are designed to protect against the most violent of flames – unstable or overdriven detonations. Certainly the arresters must still be installed between the source of ignition and the part of the facility or piping system for which they are providing protection. Unstable detonation arresters are heavier and more expensive than other type of arresters, but provide superior protection and peace-of-mind for engineers and facility operators.

Flame arresters can also be classified as short-time-burn or endurance burn depending on the length of time that they can withstand a flame without becoming compromised.

The Protectoseal Company manufactures a range of deflagration and unstable detonation arresters for the vapour control industry. Protectoseal so strongly backs the installation of unstable detonation arresters in lengthy piping systems that stable detonation arresters do not even form part of their scope of supply. Protectoseal is represented in South Africa by Energas Technologies.



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Gas detector for multiple applications

COMTEST - local representative of Industrial Scientific, global leader in gas detection – has announced a new version of the Ventis Slide-on Pump. The new pump is compatible with both Ventis MX4 and Ventis Pro Series Multi-Gas Monitors and is ideal for workers who typically wear their gas monitors for personal protection but occasionally require a pump for confined space entries or remote sampling applications. The Ventis Slide-on Pump reduces the need for workers to carry two or more gas detection instruments at one time.

Additional benefits of the Ventis Slide-on Pump include:



Ventis Slide-on Pump.

- Convenient sampling – Draw air samples from up to 15 metres away
- Easy set-up – No tools are required to attach or remove the pump from the monitor
- Interchangeable batteries – Monitors and pumps use

the same type of battery packs and chargers making them easy to exchange

“The Ventis Slide-on Pump gives workers more flexibility in the field,” said Josh Futrell, senior product manager, instrumentation.

EGYPS 2020, oil and gas exhibition

IN its fourth edition, from 11-13 February 2020, the Egypt Petroleum Show (EGYPS) is Egypt, North Africa and the Mediterranean's most important and largest oil and gas platform. EGYPS 2020

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Why mines should consider natural gas as energy source

As the mining sector, a well-known energy intensive sector, continuously strives to meet its growing energy demand and at the same time limiting CO₂ emissions with cleaner-burning alternative energy sources, why is it that only 4% of South Africa's total energy is sourced from gas?

ELECTRICITY consumption, and the cost thereof, has become a large contributor to operating costs in mining in South Africa. The need to reduce electricity consumption of high power demand systems is identified as a means to increase mining profits and the environmental impact thereof. But, why are so many of the large energy users like the mining sector still not making use of natural gas?

Natural gas is the cleanest-burning hydrocarbon, producing around half the carbon dioxide (CO₂) and just one tenth of the air pollutants of coal when burnt to generate electricity. It is abundant – available figures show that if global consumption remained at today's levels, there would be enough recoverable gas resources to last around 230 years. It is also a versatile solution. A gas-fired power station takes much less time to start and stop than a coal-fired plant. This flexibility

makes natural gas a good partner to renewable energy sources like solar and wind power, which are only available when the sun shines and the wind blows.

Do the maths

Laetitia Jansen van Vuuren, Technologies Product Engineer at Energas Technologies, reasons that in South Africa, electricity from the grid used to be cheap and dependable, but times have changed. Mines cannot afford downtime as no power means no production. The rate per kWh is also significantly more when the demand and network charge is added to the overall consumed cost – in effect doubling the R/kWh cost and bill.

“Let's look at an example: if a small-scale mining operation uses 60 500 kWh for a certain period, and the rate is R1.26/kWh, the total consumed cost is R76 230. However, once the demand and network charge is added to the energy cost, the total bill is R135 500. The effective rate for power consumed is therefore almost doubled to R2.24/kWh when additional costs are factored in. The R2.24/kWh is equal to R622.22/GJ, where GJ (Gigajoule) is a common energy unit,” explains Jansen van Vuuren.

Attractive option

When looking at these figures, natural gas as an alternative energy source becomes much more attractive. A big advantage of piped natural gas is its affordability compared with LPG and electricity. It ranges between R150 and R320/GJ compared with LPG at R400 to R520/GJ (R20/kg to R26/kg) or electricity R350 to R622/GJ (R1.26 to R2.24/kWh). Another upside is that it is also not prone to the constant price fluctuations seen in crude oil products, while it has a much cleaner carbon footprint compared with coal.

When the sun isn't shining, or the wind isn't blowing gas remains reliable. Another advantage of natural gas is the safety aspect; it is lighter than air and will evaporate into the atmosphere if a leak occurs compared to LPG that is heavier and more likely to accumulate on ground level and ignite.

Potential replacement

Natural gas has the potential of replacing electricity as the primary energy source for industrial users. Heating (hot water, air or steam) is often the highest energy requirement in processes, and if done with natural gas, it

can reduce the power required significantly. The rest of the power requirements can be supplied by a gas generator to ensure no power interruptions or production losses.

“Energas offers the German-made Schmitt Enertec range of gas engines for various applications. Dependent on project requirements one can choose from a wide range of generator sets with and without heat recovery and co-generation. The generator sets are designed for power production in island or parallel mode with other generators and or utilities,” says Jansen van Vuuren.

With Eskom's reliability of supply issues and the predicted load shedding reality, gas will be a major consideration for mines. Where the pipeline is not in close enough proximity to Sasol's natural gas pipeline, CNG (compressed natural gas) is a good alternative if the client is within a 200 km radius from a CNG supply station. The conversion stations and trailers required can be rented or procured from the CNG supplier.

Addressing concerns

“A continuous discussion point is the availability of natural gas and also the guaranteed supply in South Africa. No one wants to make a large capi-

tal investment without the security of supply. To respond to the first concern, yes, South Africa does not have an oversupply of gas available, but there is still gas available based on a first come first serve basis,” says Jansen van Vuuren.

The development of South Africa's Gas to Power IPP Programme and Gas Utilisation Master Plan (GUMP) has been happening for the past few years. A framework and plan for the strategic development of natural gas demand and supply in South Africa are in great need. There are three potential alternatives to increase South Africa's natural gas supply:

- Piped natural gas from neighbouring countries, i.e. Mozambique
- Imported liquefied natural gas (Shipping LNG)
- Domestic natural gas sources, either conventional (onshore/offshore) or unconventional (shale gas/ coal bed methane)

Sasol is the sole importer of natural gas from Mozambique along the 865 km ROMPCO pipeline. The majority of the gas is used by Sasol's internal operations and the rest distributed to Gauteng, Free State, Mpumalanga and KZN. In 2013 the total natural gas sup-



Laetitia Jansen van Vuuren.

ply in South Africa was approximately 186 PJ (91% from Mozambique and 9% from Sasol Secunda's plant). Jansen van Vuuren says construction of ROMPCO Loopline 1 and 2 has further increased the supply to about 220 PJ per annum. “However, if one looks at South Africa's total gas consumption, it is equivalent to a single medium-sized LNG terminal. Compared to other countries like Spain with a similar energy requirement, we are using 7-8 times less natural gas,” says Jansen van Vuuren.

Biggest hurdle

Despite the large opportunity of natural gas to improve the footprint in South Africa, given the government's commitment to diversifying the energy mix away from coal, the biggest hurdle is marrying the demand and supply of gas at the

same time. To realise a stable supply of gas, an anchor client must be secured. However, to secure an anchor client, proof of a stable supply of natural gas must be proven, reasons Jansen van Vuuren.

“There have been numerous efforts by the Department of Energy in South Africa to facilitate the construction of our own LNG import facility but no significant progress has been made. As industry players, we need to dynamically support the drive to increase natural gas supply. South Africa's natural gas industry has a lot of growth potential, but we are lagging the rest of the world with natural gas consumption, gas to power generation, domestic and industrial usage, pipeline infrastructure and import facilities,” concludes Jansen van Vuuren.

Oil & gas review 2019

AFRICA's oil & gas industry holds the potential for further growth mainly driven by an increase in investor appetite and a rebound in prices. These are some of the key highlights from PwC's annual Africa oil & gas review 2019 released by PwC Africa. Other key findings from the report are:

* Globally, 2018 was a successful year in oil & gas exploration with discoveries almost doubling those made in 2017.

* Notwithstanding Africa's endowment in vast natural resources, including substantial oil and gas reserves, West Africa was the only African discovery to make it onto the 2017 and 2018 top 10 lists for new discoveries.

* Although Africa's oil production increased slightly in 2018, the continent was unable to keep up with global output, resulting in a 0.1% drop in share. Africa's share of global oil reserves has declined by 1% from the prior year standing at 125.3 billion bbl, amounting to 7.2% of the world's proven reserves.

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RESURGENT Energy is a turnkey renewable energy originator and product supplier to all industries seeking alternatives to traditional electricity supply. Established in 2017 in Newlands Johannesburg, they have extended

their service footprint to include operations in all major metropolises nation-wide. Innovation and technology are key differentiators in the highly competitive renewable energies market. Boasting diverse industry

experience, strong commitment to quality standards and an innovation-driven culture, it has introduced game-changing stratagems to the benefit of its clients. South Africa is increasingly opting for solar energy and battery

storage inverter systems in a quest to stabilize and manage inbound power supply to businesses and homes alike. The unreliability of mains supply plus rising electricity tariffs has made renewable energy a popular and worth-

while investment.

Resurgent Energy has adopted a strong focus on creating customized plug-and-play energy production and storage solutions for on-grid, off-grid and micro-grid applications at residential, industrial and commercial levels. It specializes in building advanced battery storage products in consort with intelligent energy management programmes that enable customers to achieve a high level of energy independence and control with savings on electricity bills while reducing the impact on the environment.

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phosphate batteries offer a best-in-market lifespan, consistent reliability and superior safety when compared with lead acid batteries, and compact dimensions which save space.

systems that are scoped and designed by electrical engineers to cover all levels of consumption requirements. Easily upgradable systems can grow with energy consumption needs with the addition of solar panels or battery storage capacity to existing system.

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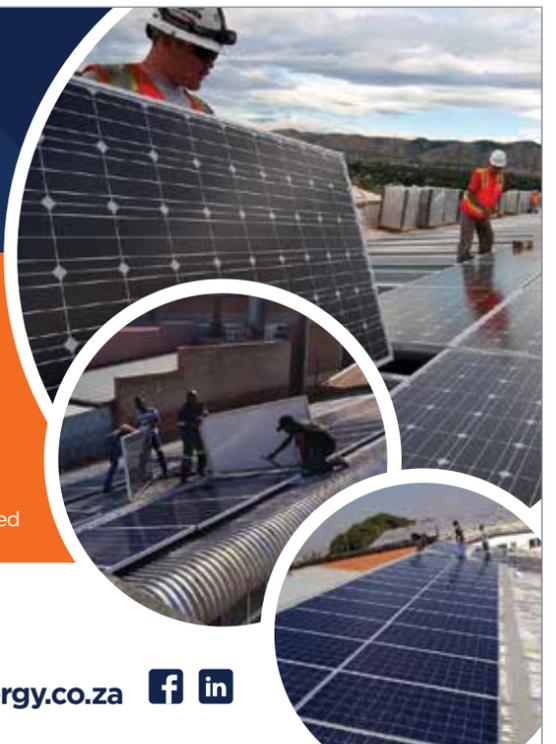
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Wings teams up with FedEx for drone delivery

WINGS, a subsidiary of Google parent company Alphabet, has partnered with FedEx Express to use drones instead of trucks for last mile residential deliveries. In a pilot project authorized by the US Federal Aviation Administration (FAA), the residential deliveries will be made by drones on behalf of pharmacy retailer Walgreens. Wings drones are designed to deliver small packages and through this project will be able to cut the delivery time of pharmaceutical products to "a matter of minutes". In a statement about the project Don Colleran, CEO of FedEx Express, stated that the company hopes that the trial "will enhance the last-mile service for urgent, same-day deliveries, customers in rural or semi-rural areas, and other exceptional needs."



Is it a bird, a plane – no it's a delivery drone! Walgreens will be the first retailer in the U.S. to test an on-demand drone delivery service with Wing in Christiansburg, Virginia next month. Source: Wing

The use of drones for commercial delivery may soon become a reality as this is not the only project that has been FAA approved. This month the FAA gave its approval for UPS to offer unlimited drone operations.

More pick-up locations for Counter

Amazon has announced that it has partnered with GNC, Health Mart and Stage Stores to offer more locations for its Counter service. Counter allows customers to

be able to pick-up their parcels from a partner store that offers the service.

The increased amount of Counter partner stores is part of Amazon's growing Hub network. The network also includes Amazon lockers, Key by Amazon, which allows keyless entry into homes and vehicles, and Amazon Day. This network could change the way parcels are delivered by offering alternatives to traditional delivery options.

According to Patrick Supnac, Worldwide Director of Amazon Hub, these alternative options not only give customers a service which is "fast, flexible and convenient" but also gain "additional foot traffic" at the partner stores. For example, department store chain Kohl's increased its partnership with Amazon from some to all stores after trials

led to increased revenues.

Best Buy offers free next-day delivery

Best Buy has announced that it will offer free next day delivery on thousands of its items from across the store. The announcement has come just in time for the holiday season where Best Buy will be competing against other firms for customers.

Best Buy's new announcement follows an industry trend as earlier in the year, competitors Amazon, Walmart and Target all made similar announcements that they would offer next day delivery to customers. Free next day delivery will be available on most of Best Buy's products. However, unlike its rivals, the service will be available to the majority of its customers without the need for a sign-up fee or minimum spend.

According to the

announcement, "99% of customers will be able to receive free next-day delivery" and will offer free standard shipping to customers who live in an area where the service is not available. In a bid for holiday season sales, it remains to be seen whether this announcement will boost sales.

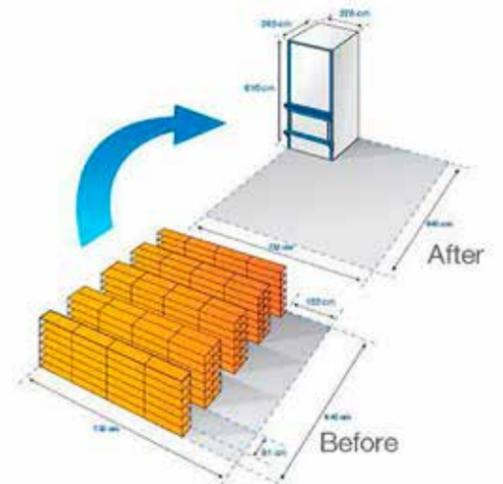
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Engen driver wellness in the spotlight this transport month



Prudence Dumbo goes through her free health screening as part of Engen Driver Wellness

ENGEN Driver Wellness aims to improve occupational health and wellness among long-distance truck drivers by providing free health screening, advice on healthy lifestyle choices and consultations where necessary.

Running for its eighth-year, the 2019 Engen Driver Wellness will reach 18 sites in four provinces in October and November, concluding on 6 November in the Eastern Cape.

All truck drivers passing through Gauteng, Free State, and the Eastern and Western Cape are invited to visit participating Engen 1-Stops and Truck Stops (see full schedule below) for free voluntary health screenings. Drivers also receive free meals, caps and water bottles after

each assessment.

In partnership with Thubelihle Occupational Health & Wellness (TOCH), mobile clinics have been set up at selected Engen Truck Stops and retail service stations. These will offer free screenings conducted by qualified nurses and councillors, including blood pressure, cholesterol, diabetes, BMI (Body Mass Index) and HIV/AIDS tests.

Brochures are available at mobile clinics to further educate truck drivers as well as Engen petrol attendants and forecourt cashiers about these chronic illnesses. Referral letters are issued where needed to ensure follow up by clinics, hospitals or medical practitioners.

Unathi Magida,

Engen's head of Transformation and Stakeholder Engagement says the primary aim of Engen Driver Wellness is to improve health through awareness and make roads safer.

A clear indication that Engen Driver Wellness is making a difference is the marked increase in the number of individuals using the services. In 2017 and 2018, approximately 4 750 truck drivers took advantage of the voluntary health screenings.

"The Engen Driver Wellness campaign continues to have a massive all-round impact for both drivers and their families, who benefit from reduced exposure to diseases and greater longevity of a breadwinner," concludes Magida.

Rail customers supported with durable, hi-tech engine range

ONE of the most demanding applications for engines is rail operations. With Africa investing significantly in continent-wide transportation networks, this is an area where Cummins' unique experience, expertise, and technology stand to play a critical role, according to Cummins Application Engineer Gerhard Potgieter.

The Original Equipment Manufacturer (OEM) offers a full line of ratings, with many engine models modified specifically for railway equipment. For example, Cummins railcar engines are based on low-profile designs for use under the car floor. This allows for easy access to service points from underneath the engine, as opposed to inside the passenger compartment.

In terms of locomotive power, Cummins offers a comprehensive range of high-perfor-



mance, low-maintenance diesel engines to meet customer requirements. There are 12 different engines available in a range of ratings, including V12 and V16 configurations. With ratings of up to 2 100 r/min, these engines are more fuel-efficient and space-efficient, as well as having longer service intervals and a higher power-to-weight ratio than low-speed units.

Potgieter stresses that Cummins is able to offer its rail customers complete solutions, and not only the engines themselves. Aftermarket support and refurbishment services are also available thanks to Cummins' extensive distributor and dealer network in Africa, in addition to its Master Rebuild Centres (MRCs). Another major advantage is its close relationship with leading third-party suppliers, which supplement its footprint on the continent.

"What gives us the leading edge in the African market in particular is that we are able to manufacture durable mechanical engines that can cope with issues such as fuel quality," Potgieter points out.

While Cummins has made Tier 3 engines available for several years now, it is already focusing on the Tier 4 requirements for more advanced markets like Europe and North America.

"The main requirements from our rail customers in Africa are improved fuel economy and reduced total cost of ownership. The fact that we are able to offer complete solutions goes a long way in assisting our customers in this regard," Potgieter highlights.

These solutions run the gamut of the entire rail industry, from under-the-floor units on passenger trains to 20 t rail grinders, high-speed trains, and locomotives hauling freight. "With over 13 000 Cummins engines running in the toughest rail applications globally, our customers have peace of mind that we can cater for diverse specifications," Potgieter concludes.

Keeping EV's and ICE vehicles moving

The changing face of the automotive industry is having a significant impact on how transmission bearings are being designed and used, says SKF's Sylvain Bussit and Daniel Jansen.

GLOBAL governmental policy and regulation, coupled with

increased customer demand, have enabled the market for electrified vehicles (EVs) to boom – according to Deloitte it is predicted that they will account for 10% of all cars sold by 2024. However, passenger vehicles with internal combustion engines

(ICE) will still remain on the market for many years to come.

This places OEMs in something of an awkward position. They must bring the bulk of their research and development (R&D) efforts to bear on devising new architectures for EVs and

hybrids. At the same time, they must continue to squeeze every ounce of efficiency from their ICE and transmissions in order to meet increasingly stringent global regulations on fuel efficiency and carbon dioxide (CO₂) emissions.

These developments have significant implications for the use of bearings in the powertrain of both ICE and EV vehicles. It is essential, therefore, that bearing manufacturers understand the technical issues being faced by OEMs and Tier 1 suppliers in order to develop tailored solutions that make their lives easier.

Regardless of the powertrain architecture, friction is the great enemy. Power loss due to friction is increasing the CO₂ emissions of traditional and hybrid powertrains and can reduce the mileage achievable from a single charge in battery electric vehicles (BEV).

In response, OEMs are increasingly using lower-friction solutions rather than the standard design of tapered roller bearings (TRBs) in their gearboxes, reducer gears and differentials.

SKF are working to develop low-friction TRBs that, in specific applications, have been shown to reduce power losses by up to 50% in comparison with conventional TRBs.

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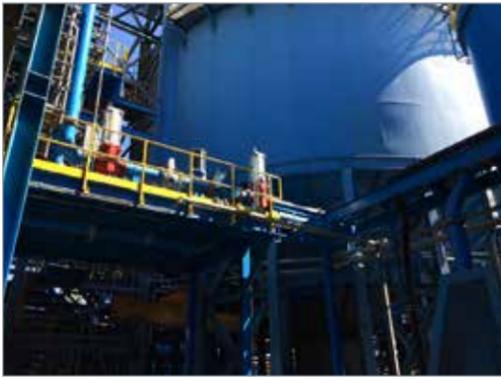
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Duration - 3 days (9.30am - 4.30pm)
Price - R19,000 + VAT per delegate

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- Fuel-air ratio control
- Maintaining load demand
- Operational efficiency
- Remote boiler monitoring

Pinch valves bring long-term savings



A prominent trader in copper, lead and zinc concentrates was expanding its mine in Spain with its production of concentrates nearly doubling to 4.4 tons per year. In search of durable, high-quality valves, able to handle various demanding media, Flowrox pinch valves were an obvious choice.

Easy installation saves time

The customer needed valves for ore, water treatment and process

water supply in copper, zinc and lead mining. Given the large range of flow control and shut-off duties, Flowrox suggested in total 330 PVE enclosed body pinch valves and PVG shut-off pinch valves. "When the project was engineered, we constantly had in mind that the choice of appropriate instrumentation for each application is fundamental to the process performance. We decided that all control valves and also

some of the shut-off valves would be pinch valves, which finally ended up saving us a lot of time in the start-up of the plant," says a project team member from the mine. The Flowrox pinch valves are full bore which not only eases the installation but also improves productivity. Because the flow of the medium is free, less pumping energy is required.

Extended life

All installed Flowrox pinch valves have an enclosed body and include an SBRT valve sleeve to meet the requirements of various mediums in different process areas and to achieve the longest sleeve lifetime. Flowrox valves improve process efficiency as they are 100 % tight shut-off even if solids have built on the sleeve wall. At the same time,

they are self-cleaning; solids accumulated on the sleeve wall break away when the valve is operated. This is due to the flexibility of the rubber sleeve, making the valve lifetime longer and extending the service intervals, compared to conventional valves on the market. In Flowrox valves, the sleeve is also the only part in contact with the medium. This makes it the only replaceable part and is easy and fast to change on site.

Long-term benefits

Flowrox pinch valves were chosen to gain long-term benefits based on a low total cost of ownership. The PVE control valves at the plant are actuated by pneumatic double acting actuators with positioners. Also, all of the on/off PVG valves include limit switches for position indication.

Pumps for Africa



The KREBS millMAX pumps in series.

KREBS® has introduced the latest Ultimate Mill Discharge (UMD) pump for heavy-duty applications.

"West African gold mines and the copper operations of Zambia and Democratic Republic of Congo are among the areas where these robust pumps dominate," says Andre Hall, FLSmidth Regional Product Line Manager — Pumps, Cyclones and Valves. "Their popularity," he says, "is based on their long wear life and high efficiency."

"Ghana is a particular success story for our UMD pumps," Hall adds. "Nearly all the gold mines there use our pumps to discharge slurry from their mills."

The KREBS UMD is popular at these mines largely because it lowers the total cost of ownership due to the millMax™ proprietary design that eliminates inefficient recirculation and grinding of slurry within the pump.

Prior to the millMAX wear ring design, slurry pumps experienced two major problems: mechanical grinding of solids between the suction liner and impeller, and flow recirculating back to the impeller eye on the suction side. Both of these problems decrease pump life and increase power consumption.

The wear ring stops recirculation by clos-

ing the suction-side gap, while still allowing for a large clearance between the impeller and the suction liner, eliminating the grinding of solids. Adjusting the wear ring while the pump is running restores performance and provides longer wear life and higher continuous efficiency, in all, lowering the total cost of ownership.

"The UMD's casing symmetry also means less inventory for customers," Hall says. "Mines that have pumps rotating in both left-hand and right-hand orientations must stock different casings, liners and impellers, adding to the operational costs." The advantage of the UMD is that it uses the same casing, suction liner, wear ring and back liner. This reduces overall net working capital.

The KREBS gravelMAX™ pumps continue to do well in Mpumalanga's coal sector, where 14 of these pumps recently replaced competitor units on a single site. Commonly applied in a cyclone feed application within the dense medium separation (DMS) circuit, the pump's wider passage allows pumping of larger solids.

"We are also active in iron ore in South Africa with pumps in the DMS circuit," Hall says. "A Lesotho diamond

mine also operates KREBS pumps, which have demonstrated a four-fold increase in wear life compared to a competitor's previous units."

As global leaders in sump pumps, FLSmidth dominates with the vMAX™ range, which features a recessed impeller design allowing the pumps to run dry. When the sump has been emptied of slurry, the recessed impeller allows the slurry to return safely down the discharge pipe without contacting the impeller, ensuring that it does not vibrate when dry.

Another recent innovation in the KREBS slurryMAX™ range of pumps is being introduced to the African market after an enthusiastic response in the US and Australia. With multiple liner and impeller material options, the slurryMAX split-case pump can handle the majority of applications for any plant across multiple industries.

FLSmidth KREBS pumps are designed using vast experience in pumping technology, to meet the challenges with throughput, downtime, wear life and overall efficiency. The complete slurry pumping solutions optimise performance, maximise wear life and efficiency, and lower operating costs.

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Viscosity-compensated plastic flowmeter

INSTROTECH is offering Kobold's VKP plastic flowmeters that operate on a special suspended float principle with cylindrical measuring tube and spring-loaded float with orifice.

The float in model VKP-3 has slots moulded onto the outside, which protect the instrument from soiling by "capturing" dirt particles. The danger of the float jamming is thus considerably reduced and soiled liq-

uids with a particle size up to 400 µm can be measured without difficulty. In model VKP-2, the sharp-edged orifice in the float renders the instrument less sensitive to changes in viscosity.

VKP specs at a glance:

- Measuring range: 2-20 ... 20-100 l/min water; 1-18 ... 10-75 l/min oil
- Accuracy: +5% of full scale
- Pressure: maximum

16bar; temperature: maximum 120°C

- Connection: G1, 1" NPT PVC glue-in connection, inserts G1/2, G3/4 soldering connection 18mm, 22mm
- Material: polysulfone

The model VKP finds application in lubricant circuits, domestic electrical, installations, machine tools, solar energy systems, cooling circuits, welding machines, and pumps.

84% local content for valve range

AVK Valves Southern Africa is helping key players in the water and wastewater treatment sectors comply with the Department of Trade and Industry's (DTI) requirements for local content.

Since 2016 following a R300-million local investment drive that included the acquisition of Premier Valves, Gunric Valves and Cementation Engineering, as well as upgrades of its local manufacturing facilities that now manufacture various AVK products previously exclusively imported from Denmark, AVK Southern Africa offers a local content specification programme of 84%.

This far exceeds the DTI's local content designation for valve products and actuators of 70%.

It means state-owned entities, municipalities, utility boards and other suppliers in the water treatment industry have complete access to world-renowned, internationally accredited valve technologies, while simultaneously being able to advance their compliance with local content requirements.

This includes a complete portfolio of AVK, Premier Valves, Gunric Valves, IPV and Baker Control Valves for plant works, distribution and transmission in the water treatment industry and for collection, outlet and treatment systems in the wastewater industry.

"We feel that there are further opportunities to grow local industry and increase sustainability by creating business for the local foundries and supply chain, which will further advance job creation and enterprise development," explains AVK Valves Southern Africa Group Managing Director, Patrick Jantjies.

Supporting skills development in South Africa

Aligned with South Africa's skills development strategy and development initiatives, AVK Southern Africa offers the country's only ECSA-accredited valves training courses.

In addition to in-house training of its local workforce, the AVK Training Academy has now certified over 700 engineers, dis-

tributors and students. This two-day training course consists of two parts - the Valves Fundamentals Course and the Advanced Valves Course - which each contribute 2 CPD points.

Developing the export market

AVK Southern Africa is also supporting the South African Government's Export Programme by actively developing export

opportunities of the company's locally manufactured Gunric Valves and Premier Valves brands through the AVK International Infrastructure network.

Having attained its PED in meeting design

nation standards, AVK Southern Africa is seeking to grow its supply of locally manufactured products in the UAE, Saudi Arabia, UK, Malaysia, India, Zambia, Malawi, Botswana, Mozambique and Kenya.



AVK Valves Southern Africa has a local content specification of 84% for a complete range of valve technologies for the water supply and treatment applications.



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High-head dewatering at Lesotho mine



Equipped with automatic priming and solids handling capability, the Sykes Xtra High Head pump is ideal for harsh dewatering applications.

NORMAL mining operations continue at a Lesotho mine, thanks to the quick delivery by Integrated Pump Rental of a rapid dewatering solution.

A constant flow of water into the mine's pit area demanded that water be urgently and reliably pumped out. A fuel-efficient Sykes Xtra High Head pump set was chosen for the job, pumping into a 200 mm HDPE line with a head of 127 metres to a holding dam. According to Integrated Pump Rental's Andre Strydom, time was of the essence to the customer.

"We secured this dewatering contract due to our quick and effective response," Strydom says. "The Sykes XH150 unit was on site and commissioned just 24 hours after receiving the call from the customer."

There was also a long term relationship with the customer, who was confident of the dewatering rental equipment available in the fleet. Strydom highlights that as mines and quarries become deeper, conditions require a solution like the Sykes XH150.

With its automatic priming and solids handling capacity, it is designed to dewater more efficiently and effectively.

"The unit has one of the best shaft stiffness ratios of any automatic priming pump on the market," he says. "Sykes engineers have ensured that the enormous pressures and heads associated with such performance do not compromise seal integrity through shaft flexing."

All models have the ability to operate unattended at high discharge heads. The pumps can be primed

with long suction hoses and can manage suction lifts of up to nine metres. The units can even run dry for extended periods due to the oil bath mechanical seal assembly. Designed for robust and reliable performance with high volumes of water, Sykes pumps have an established reputation for the fast and effective control and removal of sub-surface water.

The pumps can even operate in 'snore' condition, which accommodates fluctuating suction levels. In these conditions, the pump will snore until the liquid is available for the pump to fully re-prime itself automatically.

"Our service levels and experience made the whole operation smooth and effortless," Strydom says. "We strive to provide that 'extra mile' that a customer is looking for."

New slurry pump

FLOWROX has launched a new heavy-duty CF-S horizontal centrifugal pump that is designed for continuous pumping of highly abrasive and dense slurries.

The CF-S pump is ideal for grinding mill discharge, hydrocyclone feed, minerals processing, tailings, sugar processing and other industrial applications.

The CF-S pump provides ideal duty points with flows from as low

as 2.3 m³/h to over 4 000 m³/h. A single Flowrox CF-S centrifugal pump can reach heads in excess of 76 m and provides a good balance between efficiency and wear.

The construction of the Flowrox CF-S pump is based on a split-case and has available a range of liner material options for optimal performance.

Flowrox Digital Services (supporting Industrial Internet



of Things, IIoT) are optional features which increase Flowrox CF-S pump's productivity through optimization and online predictability.

The horizontal CF-S

pump is the first in a range of high-quality centrifugal pumps which Flowrox is launching.

For more information email martti.lahtinen@flowrox.com

Sewer pipe stoppers and testing accessories

WERNER Pumps, manufacturers of high-pressure jetting equipment in South Africa, is now able to supply an extensive range of accessories for the waste water, construction and engineering industries as the sole agent for HAAS Abwassertechnik in South Africa. These include pipe stoppers, testing sets for house connections, rehabilitation packers, lifting bags, leak sealing bags, sealing wedges, leak-sealing bandages and rubber-moulded parts.

HAAS products are manufactured in Germany and the company is recognised as leading producer of sewer testing technology, which it supplies globally.

"We've partnered



Application of sewer plug.

with Haas to offer our customers a one-stop shop for all their jetting equipment, including any accessories they may require," says Sebastian Werner, MD of Werner Pumps. "The pipe stoppers are incredibly effective tools for quickly and reliably sealing or clos-

ing off drainage systems, pipelines, sewers and gullies during repair and maintenance work."

The pipe stoppers are made of top-quality rubber reinforced with fabric and are designed to withstand a temperature range of -30°C to 80°C. The range of sizes caters

from pipe diameters of 40 to 1600 mm and can withstand back pressure of 0,5 or 1,0 bar.

Test pipe stoppers can be used to seal and plug pipes while diverting flow in the case of pipe inspection, cleaning or repair. They are effective for performing air or water leak tests. Werner Pumps also supplies protective sleeves for the pipe stoppers, which protects them against damage and makes handling easier.

Other Haas products available include short pipe stoppers, bypass pipe stoppers, high-pressure pipe stoppers, egg-shaped pipe stoppers, pillow pipe stoppers, test stoppers for gullies, skittle pipe stoppers, cone pipe stoppers and half-round pipe stoppers. Specialist options include stoppers with eyes on both sides, multi-test stoppers and oil-resistant stoppers. Werner Pumps also supplies the full range of accessories, from hoses to gauges, pressure reducers, cylinders, adapters, couplings, stopcocks, manometers, pumps and test sets.

"We even supply the lifting bags, which can be used instead of vehicle jacks, as well as to lift and remove heavy loads. They are very useful for assembling, maintaining and repairing water supply lines and water mains," says Werner. "There are five different models available, with a lifting force of between 3 and 30 tons."

He concludes by noting that the Haas agency is another way Werner Pumps is improving its customer offering. "We really spend a lot of time thinking about how to make our customers' businesses work better for them, and how to address their specific needs," he says. "We want to build long-term partnerships with clients and hope they see the value we offer."

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Benefits of stainless steel in Cape fishing industry



Processing tanks in LDX 2101 stainless steel supplied by NDE to a local fishing industry customer.

FISH processing is a vital part of the food industry so it is subject to its hygiene requirements. It also operates in a highly corrosive seawater environment, so the steel of choice is usually stainless steel. But which stainless steel? With over 500 grades to choose from, the choice of appropriate grade is dictated mainly by operating conditions. Whilst stainless steel is corrosion-resistant, not all grades are fully stain-proof or entirely corrosion-proof.

The main and most frequent corrosion issue in commercial fishing and processing is pitting, caused by chlorides in water when stainless steel's protective oxide film is penetrated in a small area of scratches, arc strikes or roughness.

Another possible failure mechanism is stress corrosion cracking.

Stress corrosion cracking occurs mainly in austenitic stainless

steels and needs three simultaneous conditions: stress (from fabrication); chlorides of any concentration; temperatures 50°C or higher.

Duplex stainless steel is the solution to prevent these types of corrosion and provides:

- Higher strength with reduced thickness and therefore reduced weight
- Good weldability
- Toughness – particularly at low temperatures
- Resistance to stress corrosion cracking

In addition, duplex stainless steel alloys contain less nickel, which is an expensive component of stainless steel.

The Western Cape branch of stainless steel stockist and distributor NDE has been supplying the fishing industry for many decades. During one of the cyclical periods of high nickel prices, NDE saw a golden

opportunity to introduce duplex stainless steels to solve corrosion problems, extend plant processing life and offer significant cost savings to customers.

Since NDE's duplex innovation, various tanks, screw conveyors, exhaust boxes, ship nose cones and even wheelbarrows have all been built out of duplex stainless steel - LDX 2101 - with many advantages over the conventional austenitic stainless steels (304L & 316L).

For tanks, there is a weight-saving due to LDX 2101's high tensile strength and as LDX 2101 sheets come in large sizes - up to 6 m x 2 m - there is less welding required.

The abrasive resistance of LDX 2101 is higher, so screw conveyors last longer.

Nose cones on ships, which help to protect the hull, are stronger when made out of LDX 2101 so ships suffer less damage.

A big saving is the reduced downtime during the fishing season when the plant doesn't have to stop for maintenance because LDX 2101 screw conveyors and flumes now last longer.

Fishing companies have a small window period in the year for catching, processing and canning of fish so it is vital that their supplier is on standby during this busy period with comprehensive stock and an understanding of their business to be able to fulfil their needs.

Partnering with a reliable and knowledgeable supplier of stainless steel is one of the important keys to success in the fishing industry.

Food grade electric chain hoists

NEW to Becker's range of Kito hoists are food grade electric chain hoists, designed for safe lifting applications in contaminant controlled and corrosive processing environments - particularly the food and beverage sector, where

pristine cleanliness is critical.

"Kito food grade ER2 series electric chain hoists - with capacities between 0,5 t and 2 t - meet the highest quality, hygiene and safety standards for lifting equipment used in food, beverage and

pharmaceutical processing," says Rick Jacobs, Senior General Manager (SGM) for Consumables, Becker Mining South Africa. "It is critical that all equipment used in the food and beverage industry complies with stringent quality and safety

requirements, to eliminate food safety risks.

"Food grade lubricants used on the Kito food grade load chain and in the gearbox are NSF H1 compliant for safe use in any facility where incidental contact with products is a concern."



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Maintain hygiene with the right pump technology

Darryl Macdougall,
Managing Director,
Verder Pumps South
Africa

HYGIENE in beverage manufacturing is vital for protecting public health and wellbeing, as well as ensuring high product quality. Even the slightest contamination can render a batch of product unusable, or unsafe for

consumption, which can mean productivity and financial losses, or even great reputational or financial risks.

Throughout the beverage production process, there are many areas where hygienic pumps can be applied, including for; clean water processing, pressing (local), evaporation (local), transport of liquids, distillery, mixing, cold zones such as pas-

teurisation, filtration, filling, hot zone in breweries, pulp transfer, flavour addition, clean in place (CIP) and sterilisation in place (SIP), as well as waste water run offs.

With this in mind, the right pump for the application should be selected based on the following considerations:

- The pump is made of the highest materials quality – and consid-

er the material make-up of the pumping system to the product being pumped, i.e. electropolished stainless steel or centrifugal pumps that offer clean-in-place (CIP) technology

- The pump design or technology should be suitable for the product being transported
- Suitable pump design for the duty cycle

- The pump itself and the system design must allow for efficient operation – that the pump is selected to operate at the best efficiency point on the performance curve – and suitably for the multi-product line
- The speed of the pump on duty point – and that the pipe

- work is designed around correct velocities
- Power supply is adequately sized, and correct switch gear is utilised
- The correct valves are in the system – and in the correct positions
- Navigating the technical obstacles of selecting the right pumping solutions

for specific applications can be complex. Beverage makers therefore need to look to a trusted and reputable brand that can offer not only a wide range of pumping solutions, but solutions that are long-lasting, cost-effective and efficient – because they are 100% fit-for-purpose for the application.



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Pumped up yeast for brewery

YEAST is arguably the most important ingredient in the brewing process. This single-cell organism takes simple sugars such as glucose and maltose, and produces alcohol and carbon dioxide. When yeast is pumped around a brewery, the utmost care is required so as not to cause any damage that could degrade its effect.

One such brewery aware of this important fact is Steam Whistle, where a MasoSine Certa pump from Watson-Marlow Fluid Technology Group (WMFTG) is being put to good use. The Certa 100 was originally supplied to the Toronto-based brewery as part of a brewhouse designed by global leaders in brewing equipment Esau & Hueber. It has now been repositioned for use as a portable pump solution for the effective and reliable transfer of yeast.

By their inherent design, MasoSine Certa pumps do not damage the all-important yeast cell, improving the fermentation and therefore the overall quality and taste of the beer.

The challenges of pumping yeast

There are certain challenges associated with the pumping of yeast. For instance, pumps should be low-shear types to prevent possible yeast damage. Here, MasoSine pumps supplied by WMFTG are proven to be very effective.

The three-vessel Esau & Hueber brew house on site at Steam Whistle offers a rate of 125 hl @ 12.0°P for wort treatment, water balance and CIP. Designed and engineered in accordance with ULc, CSA and TSSA-CRN regulations, the latest brew house technology is deployed to ensure optimum wort quality and efficiency.



Supplied as part of the brew house package, the MasoSine Certa 100 was seen as being useful for yeast transfer duties in other parts of the Steam Whistle brewery. With support from WMFTG Canada and senior sales engineer Fabio Martino, who have worked together to deliver numerous successful process and flow solutions to Steam Whistle in the past, including

the servicing of a Bredel hose pump, the highly efficient Certa 100 is now fully portable. Steam Whistle's specially designed cart also features a variable frequency drive (VFD) to help optimise energy efficiency even further.

Low shear, low pulsation

At Steam Whistle, the pump is used to transfer viscous yeast from multiple tanks located around the brewery as and when required. This activity has been in progress for the past 18 months and is proving superior to using diaphragm pumps - avoiding the associated air consumption lowering energy consumption and cost. In addition, smooth, low shear pumping is assured, while cleaning and maintenance is far easier.

MasoSine Certa pumps are purpose-designed for low shear, superior viscous product handling with virtually no pulsation. Unlike traditional pumps with rotors that cut through the fluid, Certa's sinusoidal rotor gently carries fluid through the pump to dramatically reduce shear, while reducing power consumption by up to 50% when transferring high viscosity substances such as yeast. Ideal for the food and beverage sector, Certa pumps offer EHEDG Type EL Class I and 3A aseptic certification as standard. The Certa 100 is the smallest in a range of seven pumps that offers flow rates to 99 000 l/h and pressures to 15 bar.

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Fluid Technology Group

Tsitsikamma Community Food Gardens Launch

THE MTO Group, together with stakeholders (government officials, NGOs and communities) in the Eastern Cape, have officially launched the Tsitsikamma Community Food Gardens initiative.

Thus far, 35 community gardens have been planted in the following areas: Coldstream, Stormsriver, Nompumelelo Village, Koomansbos, Clarkson and Wittekleibos.

These gardens serve to:

- feed communities;
- assist with feeding project schemes at schools/crèches;
- and unlock entrepreneurial opportunities.

The ultimate goal is to develop Tsitsikamma into a sustainable community (food secure, healthy environment and strong economy).

Safe, secure food waste disposal

SMART Waste is a waste management company with a national footprint which specializes in recycling on site. It manages the entire waste stream outsourcing the collection functions so as to concentrate on the core service of recycling.

Its services include: recycling on site, arranging the collection and sale of the recyclable material, accounting for payment and providing reports together with safe disposal certificates where appropriate.

In addition to the usual recycling it is now focusing on food waste removal. Smart Waste has pioneered food waste removals over the last five years and is able to offer a dedicated recycling service to retailers, hospitality facilities, hospitals and clinics and events. The service is customized for each client.

From its work with retailers, Smart Waste understands how to follow security pro-

cedures and stock controls. Once these procedures have been followed the food waste is placed in food-grade lockable drums of various sizes. These are weighed for record purposes and then stored in a secure area until collected and taken to the recycling facility. There is an unbroken chain of custody.

The food waste services include:

- advising the client on the most efficient way of collecting and separating different food streams
- storing the food waste in lockable containers to prevent smells, spills, vermin and theft, and
- collecting the food on a regular basis and ensuring that the food waste is properly recycled.

The most important aspects for the client are security of the food waste, cost of recycling and the certification

and reporting. There are options of where to recycle the food waste which can be agreed with the client. These include composting, either by windrows, in-vessel composting, anaerobic digestion, or in Cape Town, a fly farm and a waste to energy plant.

There are advantages to each option and the choice is often dependent on the location and distance to the client's premises.

Smart Waste also advises the client on how to remove and store food waste including which type and size of container is most suitable for its needs and provides practical training to staff.

The main advantage to removing food waste from the waste stream is the reduction in cost. In almost all cases it is substantially cheaper to recycle food waste rather than send it to landfill. The other reason for recycling food waste is the upcoming ban on organic material from landfill start-



ing in 2022. There are also the green credentials which flow from having an independent recycling certificate.

Food waste is a rapidly developing area of recycling with few uniform local standards of compostability, bio-degradability and the treatment of food waste. Smart Waste is a founder member of the Organics Recycling Association of

SA (ORASA) and is actively involved in the development of legislation and the implementation of standards. As such Smart Waste is able to advise on the present status, legislation and best practice both here and overseas.

Its dedicated collection vehicles and tailor-made service results in a comprehensive and secure food waste ser-

vice. By arranging for the appropriate containers and collection on a regular basis, food waste is taken to a site approved by the client and recycled into good quality compost. Alternatively the waste can be recycled through an anaerobic digester or other solution. Once recycled Smart Waste will provide a report and recycling certificate.

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SMART WASTE

35 years old and still making the earth move

LITTLE did Lantern Developments realise that when they purchased their JCB 3CX 2-wheel drive Sitemaster backhoe loader, that it would start first time after being left to stand for almost eight years. All it required was some fresh diesel!

Grant's father, Terry, purchased this JCB machine when he owned and operated Lantern Developments, a civil construction company. When Terry Church passed on his daughter and sons Grant and Gary took over the management of the company. At this stage the JCB 3CX Sitemaster had been stripped of its cab base, operator controls and steering column as part of the initial stages of an experiment to construct an articulated backhoe loader. Without Terry's crucial drive and input, the project lost momentum and was abandoned.



When the requirement for a backhoe loader resurfaced almost eight years later, in order to carry out work on their land in Wilderness, brothers Grant and Gary decided to restore the JCB 3CX 2WD SM to full working condition.

Kemach JCB was commissioned to do the work and the partially stripped and rusted ma-

chine needed to be recovered from site and be transported to Kemach's workshop.

"We were incredibly surprised that after we fitted a charged battery to the machine and supplied the engine with fresh diesel and drained accumulated rain water out of the starter motor (the machine had stood idle, outside in the weather, on the family's

land in Wilderness) that when we tried to start the Sitemaster, it started straight away. It had not been moved or started at all for seven years" said Church.

The total refit to this machine was not compromised and included everything from engine and transmission overhaul to complete hydraulic refurbishment etc. All aspects have been attended to by Kemach JCB, mechanical, electrical and cosmetic, resulting in this machine being ready to continue a fully productive service life, with its new white, rust resistant paintwork.

The fully restored 1984 Kemach JCB 3CX Sitemaster will now be put back into operation to assist with the development of an event and functions venue at their Wilderness property, as well as to be used in the construction of service roads around the development.

Warranty extended on pedestrian rollers

WACKER NEUSON has extended the manufacturing warranty on its RD7 range of pedestrian rollers from 6 to 24 months.

"We are always looking at new ways to deliver a high level of excellence to our customers not only through our products but also through our service portfolio," says Dennis Vietze, Wacker Neuson Sub-Saharan Africa Managing Director. "This extended warranty demonstrates that we walk the talk."

Customers and end-users who have invested in a Wacker Neuson RD7 pedestrian roller in 2019 now have added peace of mind in the knowledge that the extended maintenance offer will reduce operational costs for lowest total cost of ownership. "Customers can now focus on what really matters, completing the job on time and maximising productivity," notes Vietze.



The Wacker Neuson portfolio of RD7 pedestrian rollers (RD7A, RD7H and RD7Ye) is ideally suited to applications that require the compaction of asphalt and granular material. These reliable, high-performance machines boast a smart and compact design that delivers a host of benefits. The tapered frame enables seamless compaction right up against walls or other boundaries and short roller spacing and low centre of gravity facilitates manoeuvrability.

Operator safety and comfort are placed at the forefront of design; the dead man's handle

on these easy-to-operate units automatically stops the vibratory roller in an emergency whilst the shock-mounts and attenuator in the centre pole protect against hand-arm vibrations.

When it comes to hassle-free maintenance, the RD7 range has an advanced open frame design which provides easy access to components, keeping service time to a minimum.

The new two-year warranty is applicable on selected lower-frame components and excludes all electronic components as well as general wear and tear on the RD7 pedestrian rollers.

New range of excavators launched

HPE Africa - exclusive distributors in Southern Africa for Hyundai Construction Equipment - has launched the new Hyundai R1250-9 excavators which replace the previous R1200-9 series with new features promising higher efficiencies, easier maintenance, greater safety and improved operator

comfort.

These machines, with an operating weight of 118 000 kg, have an engine output of 567 kW at 1 800 r/min and a maximum travel speed of 3,2 km/h.

Features for precision control include a smart auto boom-swing priority, computer-aided power (CAPO) and an improved hydrau-

lic system. Hyundai's advanced CAPO system interfaces with multiple sensors throughout the hydraulic system, as well as the electronically controlled engine, to provide the optimum level of engine power and hydraulic flow for maximum performance and productivity. This system also provides complete self-diagnos-

tic features and digital gauges for critical information, including hydraulic oil and water temperatures and fuel levels.

Operators are able to easily select the correct power mode for specific applications. For example, P (Power Max) mode maximises machine speed and power for mass produc-

tion. S (Standard) mode provides a reduced, fixed r/min for optimum performance, greater control and improved fuel economy. E (Economy) mode provides precise flow and engine power, based on load demand. By using the versatile U (User) mode, the operator can customise engine speed, pump output, idle

speed and other precise machine settings for the specific job.

The new 9-series cabin incorporates high-strength steel, which is integrally welded, to form a stronger and more durable upper and lower frame. Robust full track rail guards keep track links in place. The strengthened undercarriage has been designed

for high productivity in harsh conditions, especially at quarries and mines.

Operator comfort enhances productivity, which is why Hyundai has added advanced design features to this series, including a wider cabin width, an adjustable seat and excellent visibility.

The new operator-friendly cluster, with a 7 inch LCD screen and toggle switch, allows the operator to easily select specific machine preferences for every application. Various controls, including power and work mode, self-diagnostics, optional rear-view camera, maintenance checklists, start-up machine security and video functions, have been integrated into the cluster for versatility and high productivity.

Adjustable cabin guards, work lamps, wide cat-walks, large handrails and anti-slip plates improve safety for the operator and maintenance teams.

These new machines have enhanced features for simplified maintenance and extended service life of components over the previous series. Improvements include a new auto-grease system, a high-efficiency fuel filter and a new arm and boom cylinder hose. Steel VHD bushings with a greater clamping force, replace bronze bushings. Remote drain types have been fitted to the gear box and engine and the service window of the fuel drain has been implemented.

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Stormwater management with permeable paving

THE effective management and subsequent attenuation or storage of stormwater has never been more critical in South Africa than at present. For many local municipalities, submission of stormwater management plans is compulsory with all proposals for new commercial and residential developments.

Municipalities and Engineers alike are trying to reduce the load on existing, traditional stormwater networks, as these are falling behind in their effectiveness due to massively increased volumes of water caused by the developmental impact of replacing grassland with hardstand.

Sustainable Urban Drainage Systems (SUDS) engineering design, start with the intention of creating newly developed sites that mimic their pre-development state by virtue of majority of stormwater not running off the site but rather infiltrating into the ground and thereby replenishing critical below grade water tables and aquifers. The goal is to manage stormwater on site and have as little as possible passing into municipal systems.

Technicrete's "Aqua" range of blocks, manufactured to national standard: SANS 1058-2012, subscribe to a form of SUDS known as Permeable Paving whereby vertical 'slots' between adjacent pavers provide drainage channels allowing stormwater to flow from surface, through the paving layer, into suitably designed layerworks below. The premise behind a permeable paving system is such that voids, inherently present between stones (19mm – 63mm) making up the structural layerworks of the pavement, can accommodate water capacity up to 25% of the volume of these layers.

A general design consideration for the paving block is to allow water to flow through this layer at a rate of approximately 9 kl per m² per hour. A geotextile placed between the bedding and storage layers will have the effect of throttling this flow through rate to approximately half, or 4 500 kl per m² per hour, although at the design stage of the overall system, one generally uses a rate of 10% of the maximum, namely 900 l per m² per hour as this allows for up to 90% potential blocking up of the system over time. Accordingly, a heavy rainfall event can

be designed to be managed such that the entire volume of water is maintained and managed within the site boundaries.

A secondary consideration at this stage of design is whether to capture this water only for attenuation (slow release) or retention and re-use, both of which offer a myriad of further options. As such, three basic design philosophies prevail, namely a full infiltration system, a partial-infiltration partial-discharge system or a 'tanked' storage system.

A full infiltration system is under laid with a pervious geotextile and is suitable for use where it is feasible to infiltrate stormwater directly into a suitable subgrade.

A part infiltration - part discharge system enables attenuation into the municipal network at the rate prescribed for the site as well as infiltration into the ground below.

The third option is that of a tanked system which is lined with either LDPE or HDPE impervious membranes to create a 'tank' and thereby capture and store the water for reuse in grey water and irrigation systems. With additional treatment, this stored water could be made available for potable use.

In some instances, the impervious membrane is required to restrict water from entering the subgrade and thereby preserve structural integrity of this layer. This could be an important factor where clay subgrades are encountered, in dolomitic areas or where soils / storm-water are expected to be contaminated.

An additional advantage of permeable pavement design is the element of contaminant treatment. Studies have shown that heavy metals, including but not limited to, cadmium, copper, lead, nickel and zinc are partly removed from the water through percolation in the stone layer works such that water flowing out of these systems is within potable requirements for these metals. Hydrocarbons (Oil) has also been seen to be broken down by micro-organisms that grow in the geofabric and other layers that are generally kept moist.

Technicrete's Permeable Paving systems have been successfully applied in various developments, including major industrial factories and large campus parking facilities and should be both the client and designers preferred system for prevention of run-off and flooding.

Plastic paves the path to new roads

IN only the second trial ever of recycled plastic asphalt paving to be conducted in South Africa, Shisalanga Construction have recently paved the very first road surface using plastic paving technology.

By adding recycled plastic generated in South Africa, not only do they contribute to reducing a serious waste concern, but they also improved international formulae achieving at least 6% recycled plastic material content.

Recycled plastic has long since been used in some international countries, but only recently has Shisalanga Construction introduced this technology into the country. It is noteworthy that a local company using local raw material and specifically local recycled plastic not only improves the road surface conditions, but finds a solution to plastic waste material.

"Our aim is to continue perfecting this technique," said Deane Koekemoer, managing director. "We have already advanced on international technology in that we have applied



a considerably higher percentage of HDPE recycled plastic in our formula; in fact almost double what some international companies have achieved. We see this as the first step of many to supporting our road agencies to not only continue maintaining our road infrastructure, but to do so in such a way that we consider what impact we can have on the environment.

"We won't stop at this point. We have other plans afoot to take this technology and incorporate it into potential community projects, which we trust will not only create employment but will also improve community road quality,"

continued Koekemoer. Shisalanga Construction, a subsidiary of Raubex Ltd, operates in KwaZulu-Natal and the Eastern Cape but has plans to grow a broader footprint.

"Our technology is transportable and the formula can be easily reproduced in other provinces in South Africa," said Wynand Nortje, technical manager. "We have plans to start the process in other regions in the country once we are satisfied that the process is well received and offers what we promise. We are working with the roads agencies at various levels and see this plastic paving technology as being a new dimension in our industry."

Comment from roads agency authorities is that they are very pleased with the technology and the advancement made in a direction that lends itself to including the use of waste materials.

Kit Ducasse from the KwaZulu-Natal Department of Transport (DoT) said: "The recycled plastic road trials being conducted are significant – if we can help the environment, it is better for us and future generations. Shisalanga is an innovative company and innovation that works is great. More tests will be conducted over time and once the technology has been proven, then it will be used. What I've seen to date is great."



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Problems with welding stainless steels

STAINLESS steel is a very expensive base material and welding failures can be significantly more costly. This article will focus on some of the more common welding problems associated with Austenitic stainless steel, the most common type used in welding applications.

Austenitic Stainless steel

The austenitic stainless steels consist of the 200 and 300 types of which the latter are by far the most widely used of the austenitic grades.

The austenitic stainless steels do not undergo phase transformation during the heating and cooling cycles during welding as is experienced by carbon and low alloy steels.

Preheating is thus not required to slow the cooling rate in the heat affected zones to prevent the formation of hard brittle microstructures, such as martensite, which promote cracking.

Austenitic stainless steels are prone to weld metal cracking during solidification of the weld pool – hot or solidification cracking

Hot cracking

All the austenitic stainless steels are susceptible to hot cracking. The fully austenitic types such as 310 are more sensitive to hot cracking. The impuri-

ties such as sulphur and phosphorus are low melting point elements which will congregate on the grain boundary areas. The higher the amount of impurities, the greater the risk of solidification (hot) cracking when welding.

To prevent hot cracking some ferrite is required. The ferrite can dissolve more of the sulphur and phosphorus than the austenite so these elements are retained in solution and not available for the liquid films along the grain boundaries. The amount of available grain boundary are increases significantly with small amounts of ferrite present in the austenite matrix so that the liquid films have to spread over larger surface area preventing 100% coverage of the grain boundaries.

So how much ferrite is enough? Experience and the various constitutional diagrams indicate that if the ferrite number (FN) is 4 or greater then there is no risk of hot cracking.

The consumable manufactures all formulate the chemistry of the welding consumables to have a small amount of ferrite (FN 5 to 10) in the weld metal to prevent hot cracking, except for those cases where almost no ferrite is required to give adequate toughness at cryogenic temperatures.

However care during welding must be

taken not to destroy the ferrite in the weld metal. The ferrite content in the weld can be destroyed by additions of carbon and nitrogen, loss of chromium and severe dilution.

When using 'stick' electrodes care must be taken to use a short arc length. Longer arc lengths can pull nitrogen from the atmosphere into the arc, resulting in the nitrogen becoming an alloying element in the weld. Nitrogen is an austenite promoter and hence the amount of ferrite will decrease to almost zero.

Similarly using gas shielded arc welding processes (GMAW, FCAW and GTAW) care must be taken that the gas shield is not disturbed which can result in nitrogen entering the arc, ending up as an alloying element and reducing the ferrite content.

Adding CO₂ to the shielding gas can result in some carbon pickup from the shielding gas. Increasing the weld metal carbon content reduces the ferrite content which can result in hot cracking of the weld.

When welding with submerged arc welding, the choice of flux has an influence on the amount of Chromium that will be retained in the weld. High silica fluxes can lose up to 5% of the chromium content of the wire. Some fluxes will add carbon which will also

reduce the ferrite content to near zero.

Excessive dilution normally becomes an issue when a dissimilar weld joint is made between a C-Mn steel and the austenitic stainless steel. Once again submerged arc welding is prone to having high dilution which can result in almost no ferrite in the weld metal resulting in solidification cracking.

Contamination

One of the most common mistakes made during fabrication is not to ensure that the stainless steel is fabricated and welded in clean conditions.

Contact with carbon steel must be avoided during handling, transportation, storage and fabrication. Grinding carbon steel in the vicinity of the stainless steel fabrication will lead to the fine carbon steel dust contaminating the surface of the stainless steel and eventually rusting.

Corrosion due to welding

Welding can produce metallurgical changes in the HAZ (heat affected zone) which can affect the corrosion behaviour of the alloy. Weld decay or sensitization can occur in the HAZ of the austenitic stainless steels if incorrect welding parameters were followed.

The precipitation of

chrome carbides in the HAZ where the temperature was between 600 and 850°C can lead to selective corrosion adjacent to these carbide precipitates.

The chrome carbides preferentially precipitate on the grain boundaries. Next to the carbides the region is depleted of chromium. These precipitates require short range diffusion of the large Cr atoms causing a zone depleted in chromium. The lower chromium region has reduced corrosion properties, leading to this area being preferentially attacked when in contact with a corrosive medium.

Distortion

Austenitic stainless steels have much lower coefficient of thermal conductivity and a higher coefficient of thermal expansion than ferritic steel. This result in a narrower heat affected zone with higher expansion when welded. The end result is higher residual stress and more distortion in the austenitic stainless steels compared to ferritic steels.

Some general rules for controlling distortion are:

- Use symmetrical double sided weld joints instead of single sided joints
- Always weld in a symmetrical fashion.
- Keep root gaps to a

minimum size

- Keep bevel angles to the minimum angle
- Reduce heat input in the weld to the minimum required for fusion and penetration.
- Use back stepping as a welding technique

Choosing the right consumable

The correct welding consumable grade must be used for each of the different austenitic stainless steel grades. There are matching consumables for most of the grades, the exceptions being grade 304 which is normally welded with a 308 type consumable and grade 321 which is normally welded with a 347 type consumable.

Consumables are either a straight consumable or carry a suffix. The suffix can be -L, H or N. The L suffix means it is a low carbon alloy. The N indicates it is nitrogen bearing and the H indicates higher carbon.

For shielded metal arc welding there are different types of coating. The three types are "15", "16" and "17".

A "15" electrode has a lime-based coating and is intended for DC+ polarity only. The slag covering is not as thick as that found on the "16" and

"17" type coatings.

The weld bead is normally convex in a horizontal fillet weld with excellent crack resistance. The "15" electrodes gives the best all positional weldability. However the arc is harsher than the other types.

The "16" electrode has a rutile based coating and can be used with both DC and AC polarity. The weld bead in a horizontal fillet is almost flat. The arc is much softer than the "15" type electrodes with good all positional welding.

The "17" electrode has a silica-rutile type coating. They can be used with both DC and AC polarity. The additional silicon in the coating acts as a wetting agent, having the effect of increasing puddle fluidity. The "17" type electrodes produce a concave weld bead in a horizontal fillet weld, and is often used for flat and hand a smooth horizontal position welding. These electrodes have limited vertical welding capability. The arc is smooth and relatively soft when welding.

Welding consumables from different manufacturers, although having the same classification, are by no means equal. There are significant differences in the consistency from batch to batch, chemistry, ferrite number and impurity levels.

The weldability of flux based consumables such as flux cored arc welding and shielded metal arc welding electrodes are greatly influenced by the flux composition and ratio of the various ingredients in the flux.

Customers are advised to carefully scrutinize product offers as some manufacturers either do not comply to the standards or produce products at the low end of the composition requirements which creates risks in critical applications.

Welding austenitic stainless steel successfully is no more difficult than welding C-Mn steel (mild steel) successfully, if one follows the rules which are well established.

Some of the pitfalls have been illustrated in this article and hopefully in future will be avoided.

By John Du Plessis of Spesmet Technologies, on behalf of Unique Welding 011 841 9800 www.uniquewelding.co.za



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Modernise your lifting equipment

EVERYTHING in life has a sell by date, but not everything needs to be replaced, in particular your Overhead Cranes, which can easily be upgraded as critical components reaching the end of their economic service life or your business expands and production requirements change through Konecranes' Modernisation Services.

"The state-of-the-art technology that came with your last overhead crane investment, has most certainly been replaced by something more advanced and enhanced, this is inevitable as more research and development is conducted to make cranes quicker, more efficient, safer and cost efficient. Additionally, there is a

very good chance that safety regulations have changed or become more stringent, requiring your cranes to be re-inspected and upgraded in order to be compliant. This doesn't mean that the equipment always has to be replaced, they can be modernised" said Emil Berning, Managing Director of Konecranes SA.

"Likewise, if your business has expansion needs, or certain production processes need to be upgraded or adapted, Konecranes have professionals able to conduct a modernisation analysis of all the crane equipment and associated components, and provide a detailed report as to how your assets can be modernised at an economic cost vs replace-

ment" he said.

A Crane Reliability Study, undertaken by Konecranes, assesses what is the current state of crane equipment, giving a theoretical estimate of its remaining design longevity. Elements analysed include all electrical and mechanical functions of the crane's system, including trolley processes.

The scope of analysis study will also combine one or a combination of the following: automation, capacity/performance upgrades, change of application/location.

The analysis will also inform the customer of the way forward to meet the needs for greater performance and throughput or how modernisation of your assets can support the imple-

mentation of an entirely new process.

Benefits of Modernisation

Modernisations of cranes and components offer many benefits such as:

- Extends economic service life
- Allows critical crane components to be upgraded or replaced as the end their performance life is approached
- Maintains safety and productivity as demands increase
- Reduces long-term maintenance costs in comparison to maintaining ageing equipment
- Enables cranes to meet new demands

as a cost saving alternative to replacement

- Safety notifications delivered before equipment is returned to operation, if applicable
- Documentation is supplied for new components/features including a revised crane documentation

The company has the expertise, the technology and resources to implement the modernisation of any make or model of overhead crane.

"The average lifespan of a crane is between 20-25 years, technological changes in lifting equipment occur far more quickly. Remote monitoring, the development of sensors sensitive to nearly every crane application and



other electronic controls and data monitors have no brakes on advancement. Where this provides greater safety and optimised performance, is where

a modernisation analysis and servicing comes into play. It is cost effective, therefore making it a logical decision to modernise, not replace" concluded Berning.

Hi-tech tower cranes

POTAIN has for decades built tower cranes that are easy to assemble, flexible in configuration and simply to use. Such is the Potain MDT 389 topless crane which is well suited to crowded construction sites where space is tight and multiple cranes are needed.

Like other topless cranes it has been designed to allow more cranes to over swing in a smaller area.

Louw Smit, sales director of Crane & Hoist Equipment SA, the sub-Saharan distributor for Potain tower cranes, says there are a host of features which make the Potain MDT cranes stand out from the competition.

The complete range, including the MDT 249, MDT 259, MDT 269, MDT 319 and the MDT 389, is equipped with Manitowoc's Crane Control System, or CCS. CCS is a standardised, user-friendly operating system on all Potain tower cranes.

"CCS assists users to enjoy the highest levels of comfort, flexibility, ergonomic control and, most importantly, improved lifting capacity. The enhanced productivity achieved as a result translates into a faster return on investment for Potain crane owners," Smit says.

In addition to having a fresh and modern design that allows for ultra-fast ground preparation and assembly, the Potain MDT range easily beats the competition when it comes to

transportation.

"For example, the turntable, cab mast and Ultra View cab travel in a single compact package, while the counter jib can be folded and the winch platform can be sized to take up less space," Smit explains. Another advantage is that the mechanisms are grouped in a central technical zone for easier access and maintenance.

As part of its standard features, the

Potain MDT 389 is equipped with Manitowoc's CraneSTAR, a GSM data transfer system that provides information on crane location and operation to support fleet management.

The MDT 389 come in two versions - 12 t or 16 t maximum capacity which at maximum jib length of 75 m, has a rated lift of more than 3.3 t.

Potain also offers a smaller range of CCS equipped cranes, the

Potain MDT City line, which includes the MDT 219.

Like the Potain MDT 389, the MDT 219 is the highest capacity model in its range.

There are two versions of the Potain MDT 219, one with an 8 t maximum capacity and one with a 10 t maximum capacity. All are evolutions of previous Potain MDT City cranes with jib lengths ranging from 55 metres to 65 m and hoist-

ing capacities ranging from 6 t to 10 t.

Smit says the incorporation of CCS into the new range of Potain topless city cranes helps contractors get work done faster and with greater precision. "Aside from the enhanced levels of comfort and ergonomic control, this technology also delivers more precise control in positioning loads as well as increased capacity," he says.



The Potain MDT 389 is well suited to crowded construction sites where space is tight and multiple cranes are needed.

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R6bn development in Pretoria

ATTERBURY has commenced construction of the first phase of the new multi-billion rand Castle Gate mixed-use precinct in Pretoria.

Castle Gate will ultimately comprise 100 000 m² of office space, 40 000 m² of specialist medical facilities, and a hotel as well as 1 100 residential units, and a 23 000 m² convenience retail centre. The precinct will also include eight hectares of protected green areas that will incorporate walking and running trails.

Castle Gate is being co-developed by Atterbury Property Fund (APF) and The Carl Erasmus Trust. APF is co-owned by leading property developer and investor Atterbury, its



Taken at the sod turning ceremony, picture shows (L to R) Atterbury Managing Director - James Ehlers, MMC for Economic Development and Spatial Planning - Isak Pietersen, Mayor of the City of Tshwane - Stevens Mokgalapa, CEO of Atterbury - Armond Boshoff, Atterbury Development Manager - Raoul de Villiers and Development partner Carl Erasmus of the Carl Erasmus Trust.

management and founders as well as Talis Investment Partners.

Upon completion, the Castle Gate project is expected to represent a total investment of R6bn and 20 000 permanent jobs will have been created as a result of its devel-

opment.

Atterbury identified the landmark property belonging to the Erasmus family on the last portion of the original Waterkloof farm in Pretoria as an exciting opportunity for a unique and sizeable infill development.

The Castle Gate Lifestyle Centre, is already under construction and makes up the first phase of the precinct to be developed. The convenience centre will open in September 2020, and include retail, medical consulting rooms, offices

and a gym.

Castle Gate enjoys a prominent position adjacent to the N1, and it will be easily accessible from Solomon Mahlangu Drive, which is already in the process of being widened and upgraded as part of the development.

The second phase of the Castle Gate project road upgrades includes building a new highway bridge across the N1, which will make it possible to introduce double lanes in both directions on Solomon Mahlangu Drive, between Castle Gate and Hoërskool Waterkloof.

The entire precinct is expected to be developed over the next decade and the second phase of Castle Gate is planned to begin in mid-2020.

What a bargain for Adrenna

CAPE TOWN-based property company Adrenna, looks set to pull off an audacious real estate deal.

For all intents and purposes Adrenna's main store of value lies in the Goodwood-based Consani Industrial Park, a well located property spanning a land area of 100 843 square metres and a lettable area of 42 175 square metres. According to Adrenna's website, the industrial park has undeveloped land (currently let for parking for trucking companies) which can be developed for future use. The website also noted the park has over the past years "enjoyed a good demand and has maintained a consistent occupancy level in excess of 95%."

At the release of the last annual report to end February this year, Adrenna carried a net asset value (NAV) of 291c a share – which is around R162m. The bulk of the R162m valuation can be attributed to the Consani Industrial Park, which appeared to generate rental revenue of around R27 million in 2019.

Now Adrenna's main directors – who are also major shareholders – have pitched a low ball offer to buy out minority shareholders.

Minority shareholders will be offered 130c a share, which equates to an inferred value of just R71.5 million for Adrenna's net assets.

So if the deal is approved by shareholders, Adrenna's prime movers will effectively

be buying the property portfolio – ie the Consani Industrial Park – for less than half of the last official company valuation.

Adrenna directors have rationalised their attempt to buy out minority shareholders by saying that the company has had no reason to resort to the market (ie the JSE) to raise funds.

To quote: "The directors of the company have carefully evaluated the current situation and concluded that, for an entity which effectively only has a single asset, a commercial industrial complex situated in Goodwood, Western Cape, with a total lettable area of 41 975 square metres, a listing on the JSE is of no benefit to the Company or its shareholders..."

Nonetheless the offer is cheeky. Adrenna's own independent board and the independent expert stipulated fair value range of between 194c a share and 240c a share – that is to say between R107 million and R132 million.

Perhaps at this juncture, it might be worth pondering what another listed property counters – perhaps a Western Cape focused entity like Spear, Trematon and Ingenuity – would pay for Consani Industrial Park.

In this regard it will be interesting to the intentions of Adrenna's directors after the company is delisted from the JSE. Do they merely continue collecting rent...or do they re-vamp the industrial park and sell it off?

Panoramic Table Mountain views from The Cedar



Situated in the heritage-rich, leafy suburb of Oranjezicht, Horizon Capital Residential's newest development, **The Cedar**, presents purchasers with the opportunity to reside in one of Cape Town's most sought-after City Bowl suburbs. A lifestyle of convenience and leisure awaits residents at the Cedar, where all one needs is just down the road: from an array of boutique shops, restaurants, bars and cafés along Kloof Street to the excellent public transport of the City Bowl, the green foothills of Table Mountain and the beautiful beaches of Clifton and Camps Bay. The peaceful, family-orientated neighbourhood has views overlooking some of Cape Town's most iconic sites: Cape Town CBD, Signal Hill, Lion's Head and Table Mountain.

The Cedar comprises 18 exclusive apartments spread over five storeys. The first three floors offer a mix of one-bedroom and two-bedroom apartments. The top two floors consist of three luxury penthouses with incredible panoramic views of Table Mountain and the City Bowl. Each penthouse has a private roof deck with either a pool or a jacuzzi.

The Cedar has a spacious communal landscaped deck with a pergola, jacuzzi and gas braai, making it the ideal space for residents to relax and entertain. Each apartment has been designed to include a terrace allowing residents to open their apartments up to the incredible mountain views.

David Sedgwick, Horizon Capital Residential's Managing Director comments "without a doubt what really stands out in this development is that every one of the 18 apartments has the most spectacular panoramic view of Table Mountain. Whether one is on the first floor or the fifth floor. For us, ensuring these views were maximised was the biggest design consideration."

Residents and investors alike can enjoy the benefits of sustainable features like solar water heating, water-efficient fittings and low-energy LED lighting. Basement parking, CCTV, access control and electric fencing offer residents' convenience and secure living.

The Cedar, being short-term letting friendly with a fully managed service available to purchasers, also offers investors an opportunity to achieve attractive yields. With 10 new direct international flight routes to Cape Town having been established in the last two years, including routes to Frankfurt and Vienna, air passenger growth has accelerated by 24%. This increase in international tourists travelling to the Mother City has created a high demand for the short-term rental market. With Cape Town being placed just behind the top 10 most popular destinations on Airbnb's site and on the same level as cities such as Amsterdam and Sydney, investors have realised the benefits to purchasing property in sought-after locations and renting them out to foreigners on a short-term basis.



The Cedar is priced from R2.495 million (including VAT) and as it's a new development, no transfer duty will be payable on transfer. For further information contact Horizon Capital on 021 425 8586 or visit www.TheCedar.capetown

HORIZON
CAPITAL RESIDENTIAL

Valhalla Park – home to 777

THE Valhalla Park Housing Project, which will be home to 777 beneficiaries, is making steady progress.

The installation of civil works is currently underway. The construction of the state-subsidised houses will commence in approximately two months' time, if all goes according to plan" said Councillor Booie.

"Nine contractors have been appointed to fast-track work on site, particularly the construction of the houses. This will ensure that, where possible, work on site takes place concurrently to deliver the

777 houses in the shortest possible time to the benefit of the beneficiaries. The project has experienced delays and therefore, the City has partnered with the Western Cape Government (WCG) to resume construction" he said.

In the coming weeks, show houses demonstrating the four design-types in the project will be built on site. The types of houses include:

- free-standing single-storey
- semi-detached single-storey
- free-standing double-storey
- semi-detached double-storey

OPINION

Luke solves the colour problem

Continued from back page

coffee and got dressed. At six I woke my English guest, who said a friendly 'good morning' while I announced that I had fresh coffee waiting. Then I tried my other two guests, who groaned and waved me off.

"My English friend reappeared all

fresh but with a worried look: 'What about the other two,' she queried. I shook my head, 'They're not interested.' She looked astonished. 'But they were adamant. She has to get to work!' So I tried again, same result.

"As I walked my friend out to an

already busy London, she gave me a serious look and said, 'They're not like us, are they?'

"I was stunned, but she was right. Colour has nothing to do with us."

E-mail: noag@maxitec.co.za

The dirty underbelly of "free energy"

Continued from back page

by computers fed historical temperature records than conveniently exclude periods in history that were clearly much warmer than today's and because the thermometer was not yet invented.

All earlier temperature records (before the thermometer) are guesses or second hand deductions from tree rings or ice cores or whatever else gets thought of: other words, theoretical temperatures. Nevertheless, this mishmash of temperature data is fed into a computer, "adjusted" and used to produce graphs that project expected temperatures into the 22nd century. It is a perfect recipe for getting the future wrong and producing scary headlines to order.

Add to this method of predicting scary future temperatures, the unproven theory that the world is getting bunged up with too much carbon dioxide (that is the invisible stuff that all plants need to survive) and the confident statement that mankind's guilty habit of keeping itself warm in winter, plus its desire to travel in comfort, and the result is a guilt trip of a power not seen since the Middle Ages and the unreformed Roman Catholic church.

In the process of constructing this Green religion in which belief rather than reason holds sway, some dirty secrets about "clean energy" sources have been brushed under a metaphorical carpet.

In contrast to the hysterical fear of nuclear radiation that has produced stringent rules for dealing with nuclear waste, the by-products of solar panel production have been allowed to go unchecked, largely one suspects because most manufacture takes place in Communist China where loud, theatrical demonstrations have about as much chance of lasting for more than a few seconds than the snowball's chances of surviving a spell in Hades.

Yet measured against nuclear waste that does erode in toxicity over time, waste produced in photovoltaic panel manufacture lasts FOR EVER, and ever, and ever.

It has been estimated that solar panels generate 300 times more toxic waste than that produced by nuclear power stations when they generate electricity. Try finding that factoid in the main stream media of the western world. None of it is buried in concrete drums is specially selected landfills of impermeable clay. Instead it is allowed to leach from factory to farmland to the water table like so much bath water.

And what you may ask is this toxic solar panel waste? Well it's pretty filthy, dirty enough to get every environmentalist green with anger and righteous indignation. There is a lot of it too. Solar panel manufacturer produces lots of waste,

unlike a nuclear power station than barely manages a ton in a year of operation.

Already, Japan generates 10 000 tons every year. In twenty years, it will be - 800 000 tons. There are no plans to dispose of it safely. But that is nothing compared to the toxic waste generated by China where they not only make solar panels they operate twice as many as the United States. In thirty years, time China will be producing some 20 million tons.

So much for the quantities of solar panel waste. Now for what it consists of. All those who think all nuclear waste is dangerous, however small, standby for a really shocking fact.

To make solar panels you need sulfuric acid, and phosphine gas. After use they contain lead, chromium and cadmium -- all carcinogens. The manufacturing process also emits nitrogen trifluoride. This gas is the king of greenhouse gases. Its presence in the earth's atmosphere has dramatically increased in recent years.

Surprise! You don't hear much about it among the green enthusiasts.

Instead, we all are subjected to a steady stream of shock horror headlines, blatant misrepresentation of the science, and lately speeches in the United Nations General Assembly by Swedish teenagers angry with their parents for allegedly destroying their future.

As they say, you could not make it up.

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Cape Business News is always on the lookout for stories of companies that are shaping the Cape business landscape. If your company has a story to share, in these, or any other business sector, send your story to editor@cbn.co.za for consideration.

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Eskom's proposed pricing plan cannot stop solar power in South Africa

By Manie de Waal, CEO of Energy Partners Solar

ESKOM's recent announcement of a new suggested pricing structure is widely perceived as a reactive measure by Eskom to compensate for its own inefficiencies, as well as support the generation of unsustainable expensive coal-driven power, while the cost of renewable power keeps coming down.

Our commentary follows reports that Eskom has proposed a significant increase to its fixed connection charges while reducing electricity usage charges. The outcome of this would be that businesses could effectively pay a flat rate for electricity, with their

monthly or annual power usage having little effect on their electricity costs.

Understandably, this has raised concerns that grid-tied solar photovoltaic systems will become significantly less cost-effective in the future. However, that is only when compared directly to the current status quo – both in terms of Eskom's pricing structures and technology.

A move by Eskom to artificially inflate the sale of coal-generated power may very well accelerate the market adoption of renewables, especially as battery storage is starting to enter the energy mix. Experience has shown time and time again that the market (and especially South Africans) can adapt quickly to ensure the contin-

ued growth of least-cost generation.

One such adoption could be that customers opt for a lower NMD (Notified Maximum Demand) with the addition of battery storage into their energy mix – effectively accelerating the move to complete power independence.

However, before the market will need to begin adapting to Eskom's suggested changes, these changes would actually need to be approved.

The new tariff proposal is in stark contrast to official policies, and will be subject to intense scrutiny by the National Energy Regulator of South Africa (NERSA) before it reaches approval stage. Gaining the necessary approvals from the regulator is also a years-long process, and it is likely to take more than a decade for such a proposal to make it through to implementation.

Considering solar generation is already one of the most flexible and affordable power sources in South Africa, its ability to compete with grid-based tariffs (especially expensive coal-generated power) cannot be mitigated by artificial pricing structures such as those put forward by Eskom.

What is actually needed, which has been repeatedly voiced by the renewable power generation industry, is for Eskom to collaborate with the massive and willing underlying market forces to reach an equitable agreement for all parties concerned.

Such a willingness to engage will effectively unleash massive untapped potential (and private capital) in South Africa to collectively engineer ourselves out of the current and future power challenges.



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Luke solves the colour problem

LUKE the Dude was the centre of attention at the local Pub and Grill, meeting place of the convivial conversationalists who dissect the more serious developments in our town and the world. All of us were staring at him with glasses half-raised except, of course, for the Big White Dog, who knew better and took no notice.

"Nothing!" exclaimed Luke the Dude. "Skin colour has Nothing! to do with who we are or anything else. It is an accident of genetics."

"I agree," said Big Ben with a wide grin of vindication.

The rest of us were more sceptical. "Wait a minute," said Irene the Queen. "What about the history of this, our country where we were born and live?"

"I do not contest that," nodded Luke the Dude. "That has been the way of our governments, whether South African Party or National Party – both of which applied the status quo as they inherited it – or the United Party after those two were united, or the Reunited National Party who did not like the other unification and went on its own – these Nats Mark II put the status quo and much more into laws, starting when they first formed a minority government in 1948 – and then they cancelled all those laws again from 1989 – which brings us to the ANC, who reintroduced their own style of racist laws and who now practice racist engineering on a scale that would have amazed Dr Hendrik Verwoerd."

"What a boykie, Boyo!" admired Colin the Golfer. "Are you dating a history teacher now?"

"I am not always in the pub you know," retorted Luke the Dude huffily, "I also enjoy educating you intelligent people except maybe The Prof. I take an interest. And anyway, your mothers were wrong; you can learn something new in the bar."

"Useless!" opined Jon the Joker.

We were all momentarily silent, until The Prof, not sure whether his intelligence had just been questioned, spoke up: "Pray tell, young Lucas," he ventured carefully, "the past being what it is and not in dispute, what do you make of the current government's fixation with skin colour? As with Black Economic Empowerment and colour-based affirmative action, where even so-called coloureds are the targets of discrimination? Not to mention whites, including highly qualified and experienced whites?"

At this point the Big White Dog growled in her sleep, dreaming (no doubt) about unfair canine discrimination against whiter breeds.

Jon the Joker applauded. "You tell them BWD!" he encouraged, his face finally creaking into a smile. Luke the Dude was taken aback, but he was not giving up the floor that easily.

He resumed, somewhat louder, "Of course the ANC is doing all that and worse, but none of that disproves my point. The colour of your skin has no influence on who you are – how strong, how clever, how grumpy, how hard-working, how honest, nothing!"

"So what are you saying about our government," worried Big Ben, "that they are all wrong?"

"That is exactly what I am saying, Ben my big mate, I have always said you have more brains than Bob the Book will give you credit for."

Bob raised his eyebrows in surprise while Big Ben threw him a suspicious glare.

"You know the rules!" interrupted The Governor. "No politics or other aspersions leading to fights in the bar! Angela, please fill the glasses of these good people."

"Fights?" exclaimed Jon the Joker in mock shock. "What on earth are you talking about, my good man? What kind of a bar is this?"

Suitably replenished with our various nectars of choice, the enlightenment continued.

"I think," frowned the Prof, "it would be a generalization to say everybody in the ANC is wrong. Obviously, it is dangerous folly to base government policy on skin colour, as South Africans of all people should know. It is also evident that ANC politicians are doing exactly that – and that the majority of them believe that what they are doing is right. But it is also a fact that wiser people in the ANC realise that it is wrong."

"If they know that their skin-colour politicking is wrong, what are they doing about it?" challenged Luke the Dude.

"Nothing fast," conceded The Prof. "But someone like our president, Cyril the instant billionaire Ramaphosa, believes in the long game or, as he once said, boiling the frog slowly."

"You could also say the long take," added Stevie the Poet in obiter dictum, "if you are of a literary bend with a touch of melancholy."

"Now you have lost me in my own argument!" complained Luke the Dude. "Please, before we take off into fiction, let me use facts to explain what I mean. I am going to tell you a true story. That okay with you?"

"You have the floor," conceded Stevie the Poet gracefully.

"This happened while I was living in London," related Luke the Dude. "I had a good job, I worked hard and I lived well. I also met many interesting people, including a German banker who sometimes dated an interesting Englishwoman. She was highly intelligent, keenly interested in the events that moved the world and spoke with a posh accent. I invited her to a party and we became friends.

"As happens when you live in London, South African friends, some of whom you've hardly met, call you up looking for a place to stay while they visit. I had a large enough flat, so I was seldom without visitors. One of those was a black political journalist I had known in Johannesburg. I looked forward to catching up.

"As soon as he arrived on the overnight flight, he phoned his 'cousin' who was in exile in London. She came straight over and the two disappeared into his bedroom.

"Given this romantic development, I changed my plans for a pub evening and called up my English lady friend. Did I mention that she was black? I explained the situation and invited her to dinner with my South African guests. She thought it would be fascinating.

"So we met at my home that evening and walked to a nearby Indian restaurant known for its good food. The Indians looked at me with new respect and from then on my reception there was always most welcoming.

"The food was tasty, the wine was flowing, the company was lively and a jolly good time was had by all.

"Afterwards we went back to my place for

OPINION

ON THE CONTRARY



Pieter Schoombee

a toast or two of good Irish whiskey and a continuation of the gripping conversation. Before we knew it, it was after midnight, the buses and the underground were no longer running and taxis were hard to get. So I did the gentlemanly thing and invited the ladies to stay over. The cousins would have shared anyway, so I had a private bedroom for my lady friend.

"They agreed on one condition: I had to solemnly swear to wake them at six, so that they could get going for their busy days. We said our goodnights and went to bed.

"I got up at 5.30, had a shower, put on the

Continued on P31

The dirty underbelly of "free energy"

FREE energy from the sun and the wind! Isn't that a wonderful idea? And it's clean too! Yeah, right. No, it's not.

So-called free clean energy from the sun and the wind is neither clean nor free. Nor is it produced when the sun does not shine or when the wind does not blow (despite the headlines and the passion with which they are both promoted).

Neither source of electricity is cheap when subject to common sense economics—the cost of the steel, the plastics (yes), the concrete and the energy needed to produce them. Then there is the cost of connecting wind and solar plants to the national grid which is born by utilities like Eskom. Not to mention the cost of their back up petroleum-fuelled generators needed to balance their output. And finally, the fact that their promised output of energy rarely if ever, materializes.

Yes, some wind and sun-generated electricity can be stored in batteries but they are not yet able to perform as well as power stations the world is familiar with – those

THE OTHER SIDE OF THE COIN



Keith Bryer

operating on coal, diesel, gas, and nuclear fuel.

Wind and sun are, we are told, the answer to an existential threat to human survival, the alleged but scientifically unproven and unprovable theory that the world's climate is heating up to apocalyptic levels.

Ok, ready steady go! Half of those reading this can now go outside, scream blue murder, and run to the Press Council for my daring to express a view they think is akin to religious heresy: the other half can read on for a few salient facts not often aired or written about in the media, and judge for themselves if climate hysteria is justified and the trumpeted solutions are better for the planet.

It should be hammered home that all predictions of climate doom have been made

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