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ISSN NO: 1996-9708

MARCH / APRIL 2021

R17,10 (VAT incl.)

ISSUE NO. 102

Coega a kingpin in govt 'power ships' plan

COEGA in the Eastern Cape is one of three key ports at the heart of controversial government plans to solve South Africa's electricity supply crisis with the deployment of 'power ships'.

It, along with Richards Bay in KwaZulu-Natal and Saldanha in the Western Cape, have been selected as locations for the placement of floating power stations which could bolster the country's ailing power grid by a combined 1,200MW.

This was revealed in a recent announcement by Mineral Resources and Energy minister Gwede Mantashe that Turkish company Karpowership was included in the preferred bids for South Africa's Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP).

The programme was released to the market in August 2020 with the aim of alleviating the country's electricity supply constraints and to reduce the extensive utilisation of diesel-based peaking electrical generators in the medium-to-long-term.

Mantashe said bid submissions closed on 22 December 2020 and attracted 28 bid responses with a potential contracted capacity of approximately 5,117MW. "This clearly demonstrates a sustained private sector interest in participating in the South African energy landscape."

Supporters of power ships say these privately owned and operated anchored vessels with liquefied natural gas (LNG) fired turbines, supplied by floating LNG units, are cost-effective as well as simple and quick to deploy – they can be up and running within as little as 100 days.

Five wind and solar projects also placed successful bids in the programme.

Stanley Semelane, Senior Researcher, Climate Services, with the CSIR's Holistic Climate Change Impact Area welcomed the announcement, with some caveats. "The emergency procurement mix demonstrates that there is a pool of readily available technologies that can generate much-needed power in South Africa. All at once, three liquefied natural gas powerships with solar, wind and batteries were awarded preferred bidder status," he wrote in a recent Daily Maverick opinion article.

He stressed, however, that these were not overnight solutions. "It is going to take time for these projects to reach financial close, construction completion and commissioning. Our funding institutions are cognizant of the country's energy crisis and we can only hope that there will not be further delays."

But given the mounting opposition to the power ships proposal, lengthy



delays seem inevitable.

Protests by environmentalists played a key role in sinking the idea when it surfaced last year at the height of the first lockdown. It emerged that Karpowership had been exempted from complying with

mandatory environmental impact assessment (EIA) procedures. When no clear reason could be found for this exemption it was quickly revoked by the Department of Environmental Affairs, Forestry and Fisheries.

Industry observers say that unless

Mantashe can secure a second exemption and make it stick this time, the power ship project is likely to bogged down for years as its critics use the EIA and other approval processes to block it at every turn.

Enquiry no: 1

R1bn agri-industrial fund to boost black farmers

IN a key development aimed at addressing funding constraints facing black farmers and breaking entry barriers to commercial farming, the Industrial Development Corporation (IDC), in partnership with the Department of Agriculture, Land Reform and Rural Development (DALRRD) has launched a joint Agri-Industrial Fund.

The R1bn fund is an initiative of the DALRRD managed through its blended finance programme but carved out to IDC. Among other objectives, the fund will also be utilised to develop and implement high impact black-owned large scale commercial agricultural projects.

"This is the first partnership of

its kind between government and the DFI community. For us, as the IDC, this development demonstrates governments trust in the IDC's ability to play an impactful role in the various initiatives adopted to speed up economic recovery," said IDC CEO TP Nchocho.

"The broader Agricultural sector is central to the recovery of the local economy but most importantly, this fund's objectives are consistent with the IDC's role in increasing the number of black commercial farmers."

DALRRD Acting Director General Mooketsa Ramasodi lauded the partnership, adding that the fund's main goal was to support the development and expansion of the agricultural

sector by assisting qualifying black producers/investees in developing, expanding, acquiring, and integrating operations in prioritised value chains.

"The IDC has a grasp of some of the funding constraints facing black farmers, which is why we believe that this partnership will help break down some of the barriers to entry as well as elevating these farmers to becoming fully fledged commercial farmers," Ramasodi said.

Through this partnership, funds will be provided to qualifying end beneficiaries as grants. There will be no pricing and subsidy implications from a risk perspective – a factor Nchocho says is the biggest draw-

card to the fund.

"This key component of the fund aims to eliminate barriers to entry, thus attracting a significant component of black farmers looking to scale up their commercial farming activities." He said the fund will be utilised alongside the IDC's other internal funding products to fund businesses through a blended approach.

The objectives of the fund align with the IDC's strategy and industry development goals aimed at expanding production of long-term, high-value horticultural crops, other agricultural commodities, where South Africa has an opportunity for import replacement and export enhancement, at the same achieve high job

creation, and broad-based transformation.

The fund seeks to help establish high-value, export-oriented orchards on community-owned agricultural land (restituted or communal properties) across the country including establishment of competitive contract growers in the poultry value chain; the protein value chains such as poultry, pork and beef value chains.

Other ventures that will benefit from the fund include related agriculture and other agro-processing ventures that support the Agriculture and Agro-Processing Master Plans.

Enquiry no: 2

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Manufacturers still reporting constrained supply chains, survey shows

GLOBAL restrictions implemented to curb the spread of COVID-19 have had a direct impact on manufacturing supply chains with constraints still evident across many manufacturing subsectors a year after the country first went into hard lockdown, according to the Q1 Absa Manufacturing Survey.

"South African manufacturers are reporting issues in the supply chain that are resulting in raw material shortage constraints negatively affecting their production processes," said Justin Schmidt, Head of Manufacturing Sector at Absa Retail and Business Bank.

"Currently, a major problem globally appears to be the supply of shipping containers and vessels across routes, including to and from South Africa. Whilst manufacturers remain hopeful that this will be resolved within the quarter, the risk of successive Covid-19 waves around the globe and further lockdown restrictions is a major concern."

For the second quarter in a row, manufacturers highlighted raw material shortages as a serious impediment to activities. With the index currently at 57 points, this is the second

highest number recorded since 1974. The index ranges between zero and 100, with zero reflecting no constraint and 100 a serious constraint.

The quarterly survey, which covers approximately 700 businesspeople in the manufacturing sector, was conducted by the Bureau for Economic Research (BER) at Stellenbosch University between 18 January and 1 March 2021.

The majority of survey responses were received during the last two weeks of February, when the peak of the second wave of Covid-19 infections in South Africa had passed and it was evident that some of the restrictions on economic activity would soon be lifted.

In spite of this, the higher intensity of loadshedding in the quarter when compared to Q4 of 2020 as well as raw material shortages, helps explain why overall confidence fell from 31 to 25 index points in Q1 2021.

Positively, insufficient demand as a constraint on current activities remained at 65 index points, only 9 points lower than in Q1 of 2020 and 20 points below a peak of 85



reached in Q2 of last year. Whilst this indicates that insufficient demand does remain a constraint for manufacturers, the situation seems to be improving.

Despite previous promising signals that the manufacturing sector's output recovery could receive a boost in 2021 if the higher demand levels were sustained and manufacturers could

restock inventory to meet forward looking demand, the Q1 survey results indicated that output continued to lag behind demand – stock levels of finished goods relative to expected demand remained the lowest on record.

"Many manufacturers close during December and January, and as such, there is often a dip in production volumes over this period. This year however, loadshedding as well as the introduction of adjusted level 3 lockdown restrictions, notably the alcohol ban, have been a major drag on production," Schmidt noted.

The February production data will provide a good indication of the sector's production recovery. The sector seems to have gained some lost ground as indicated by the Absa Purchasing Managers' Index (PMI) which increased for a second consecutive month in February 2021 to 53.0, signaling an improvement in business conditions, he added.

"External shocks such as the reintroduction of lockdown restrictions to mitigate the impact of a third wave of Covid-19 cases and the resurgence of load shedding, which will likely remain a factor throughout 2021, pose a risk to the recovery." *Enquiry no: 3*

Ports authority HQ move an opportunity for growth and unity, says mayor

NELSON Mandela Bay Municipality Executive Mayor Nqaba Bhanga has challenged the Eastern Cape to learn from developing provinces to unite and work together to develop the "Home of the Legends" and create sustainable economic opportunities for its people.

Bhanga said this at a mayoral breakfast engagement session, where he hosted various strategic stakeholders to welcome the Transnet National Port Authority team who will be relocating to the city as part of the entity's head offices relocation to the Port of Ngqura.

"Instead of fighting Durban, we need to engage progressively. We are known as the Friendly City and we want to live by the values of our motto... that we remain friendly to the people who will be coming here and live by the values of Nelson Mandela, to be accommodative, engaging and negotiating," he said.

The Mayor was joined by the Deputy Mayor Thsonono Buyeye during the session who also welcomed the move and encouraged the stakeholders to be great hosts to the TNPA employees. Other stakeholders included organised business sectors, religious sector and representatives from the maritime sector.

Bhanga said the Transnet relocation was not just an opportunity to inject growth and business into the region, but also to promote unity. "The Premier is ANC and the Mayor here is DA but we said let's leave the politics aside and look into what is important for



Nelson Mandela Bay Municipality Executive Mayor, Nqaba Bhanga.
Image: SUPPLIED

the people. We said let us welcome this initiative to inject growth in the Eastern Cape and not only look at this as Port Elizabeth and talk about a regional economy.

"There should be a connection into what is happening in this part of the province and what is happening in East London because there is a temptation that NMB and East London must compete."

He added that it was important to use the major exporting ports to compliment the economic activities as opposed to fighting and competing.

"We can build the Eastern Cape economy using these

nodes, NMB, BCM and Port St John's. We could have a collected effort to impact on the growth of the Eastern Cape economy. We need to envision the Eastern Cape we want, together."

TNPA General Manager: Strategy and Special Projects Nico Walters said, "I trust we will have many more engagements to discuss growth in the region and how we can jointly pull forces together to develop all of the ports in the region to become a strength and provide economic opportunities for growth".

Eastern Cape Maritime Business Chamber, Unathi Sonti said the TNPA move promised a bright future for the province's maritime sector. "The investments that are coming into the region will position NMB and the Coega Development Corporation as Africa's top Special Economic Zone."

Enquiry no: 4

Trucking big boost for farmers in need

THE drought in South Africa has threatened the livelihood of many farmers, prompting Motus Isuzu in partnership with Isuzu South Africa and various farming assistance programmes to join forces in an effort to ease this burden.

"The farmers are in desperate need. They have no money for food or to even send their children to school," said Motus Isuzu Franchise Managing Director, Le Roux Roux. "While Mpumalanga and the Free State received good rain and farmers expect a good harvest, several farmers in northern Limpopo had to slaughter their animals because of the drought. The situation in the Northern and Eastern Cape provinces is equally dire."

Isuzu SA donated three new FVZ 1400 trucks to this initiative and Motus SA have provided the drivers and the fuel for all these trips. Since November, the trucks have been doing trips on an almost weekly basis, collecting feed in areas that have had good rainfall and transporting it across the country to the areas in need, often covering vast distances.

Organisations such as Farmers Assist and Voer'n Boer handle the donations of feed and identify the areas in need and Motus Isuzu ensure that these large loads are delivered where they are most needed.

To date the three trucks have collected and distributed feed in many areas across the country, including Merweville, Vanwyksvlei, Somerset East, Upington and Pofadder.

"The investment in this project is substantial but it is worth it when you see the look of relief on the farmers faces. The effect that these deliveries have on the farmers is enormous and often means respite for their staff and the entire community," said Roux.

The feed delivery initiative involves staff at all the Motus Isuzu dealerships. Staff members from the closest dealership are our contact with the farmer and are present during collection or delivery of feed.



"We are trying to survive the worst drought ever. There's no more natural vegetation left on the farm, we are dependent on these fodder donations. The feed is expensive, and due to our remote location, the delivery costs are extremely high; these donations that we are receiving are worth gold," said Charles Muller, who has been a farmer in Merweville for the past 46 years.

"I am proud to be part of this initiative, as we drive across the country cars flash their lights to show that they appreciate what we are doing to help the farmers and I think that we are setting a great example for the rest of South Africa, showing what can be achieved if we work together," said David Xaba, a truck driver from Motus Isuzu Isando.

Gishma Johnson, Isuzu SA Corporate Communications Manager said that one of the company's corporate social responsibility objectives is to help communities in crisis. "Finding the right partners to get the job done is so important and demonstrated just how much can be accomplished when you work together. When Farmers Assist SA approached Isuzu for assistance earlier this year, we reached out to our dealer network to garner support and are

very pleased that Motus Isuzu Isando stepped up to this."

Motus Isuzu has four dealerships located in Isando, Vereeniging, Kimberley and Bloemfontein. These dealerships are located near the main arteries of South Africa, including the N1, N12 and N3.

"The Bloemfontein and Kimberley dealerships are well situated near the farming communities and service a large geographical area from their central location. Motus Isuzu are in the process of setting up a new dealership in the North of Pretoria, on Sefako Makgatho Drive, which will allow the group to better service their customers in this area as well as those travelling north on the N1," said Roux.

"Motus Isuzu really sees this as a way of giving back to the farmers, apart from being great supporters of the Isuzu brand, the South African farming community are the backbone of our country."

From a product perspective, the next few months are exciting times for Isuzu with the arrival of the new M-UX later this year, while the new D-Max bakkie, which will be built in Port Elizabeth, will go on sale early in 2022.

Enquiry no: 5

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Tel: 0861 122 441

P O Box 1322 Wandsbeck 3631
Fax: (031) 266 7514
Email: admin@mediaevents.co.za
www.mediaevents.co.za

Managing Director: Janet Coom

Editor: Alan Cooper
Email: editorial@mediaevents.co.za

Sales & Marketing Manager: Cheryl Murphy
Email: cheryl@mediaevents.co.za

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Plan to transform sleepy EC town into coastal hub city

GOVERNMENT believes the coastal town of Port St Johns, with a population of fewer than 8000, has the potential to be a major tourism and economic hub.

This emerged from a keynote address by Department of Cooperative Governance Director General (DG) Avril Williamson (*pictured*) to the town's Local Municipality Strategic Planning Session on behalf of Cooperative Governance and Traditional Affairs (COGTA) Minister Nkosazana Dlamini Zuma

The strategic planning session presented an opportunity to reflect on the performance of PSJ and to reimagine its future within the context of the District Development Model (DDM), Williamson said, adding that the municipality was in a key location within the first pilot site

launched by President Cyril Ramaphosa – the OR Tambo District Municipality.

She spoke glowingly of Ports St Johns' pristine coastline, complemented by fertile land which is under state and communal ownership, as well as its diverse flora and fauna, diversified marine biology, and its rich history and heritage.

She said the town and the entire district had untapped, unmatched potential for ecotourism and diversified marine biology.

Referring to the 600 kilometres between eThekweni and Buffalo City without a city in between, she said this could make Port St Johns an integral part of the coastal belt plan linking Alexander Bay to Kosi Bay with inland and other hub developments.

As part of the way forward, the DG emphasised the institutionalisation of long-range planning through the DDM as a key element to realising the potential of a new coastal city. She emphasised the importance of Integrated Development Plans (IDPs) which, she said, are central to people development, service provision and good governance.

"To this end, the IDPs and One Plan have to be integrated so as to have a positive impact on communities. The OR Tambo DDM Hub is important as it is an extension of the COGTA support system and a resource capacity for all municipalities in the OR Tambo district particularly as it pertains to shared services to facilitate integrated planning across the three spheres of government." *Enquiry no: 6*



How this largely unknown fuel could turn SA into an energy exporter

SOUTH Africa has traditionally been a net importer of energy, but a relatively new clean technology could be pivotal in turning the country into an exporter - and help to dramatically cut the country's carbon emissions.

That's according to RMB CEO James Formby, who said, "Although green hydrogen is yet to be widely adopted around the world, it is one of several potential low-carbon fuels that could take the place of today's fossil fuels."

Green hydrogen is produced by splitting water molecules using electricity. When the electricity is generated by renewable sources like wind and solar, emissions from the process are reduced to zero. Green hydrogen does not come from any type of fossil fuel.

"South Africa is exceptionally well placed to stand to benefit economically, environmentally and socially from the rapid development of new hydrogen technology.

"We could become a key player - and indeed an exporter - in an emerging global hydrogen economy which has major applications in providing fuel for transport, electricity plants, fuel cell batteries as well as heating for industry, residential and commercial property," Formby said.

Daniel Zinman, Head: Power, Infrastructure Sector Solutions at RMB said South Africa "has excellent renewables resources; particularly in solar and onshore wind, and land is relatively plentiful. It also has one of the world's largest - if not the largest - platinum group metals (PGM) reserves, and PGM catalysts are needed to make both hydrogen and fuel cells."

Another advantage is that the existing natural gas pipelines across SA, albeit limited, could be repurposed for the transportation of hydrogen. This could significantly reduce the



costs associated with green hydrogen development.

"It means renewable electricity could be produced at a significantly lower cost than in other parts of the world," Zinman said.

He added that green hydrogen is likely to leapfrog hydrogen made with gas and coal as the most cost-effective form of the energy before the end of the decade, and by that time an industry could be developed at scale, both for local consumption and export.

Green hydrogen currently only accounts for approximately 4% of hydrogen production worldwide.

In addition, green hydrogen's capacity to act as a storage system for excess renewable energy can help overcome the irregularities and current weaknesses in renewable energy supply and provide remote communities with permanent energy access.

"Encouragingly, the South African government, through its *Hydrogen South Africa initiative*, is currently working to develop hydrogen technology in order to bring tangible benefits to the local economy, reducing our energy deficit while ushering in a cleaner energy environment. It has also been looking at potential

export opportunities with countries like Japan

and Germany," Zinman said.

"A hydrogen economy also offers significant potential for job creation and would help attract international investment into South Africa and Africa overall," Formby said.

He added that with our resources and growing interest in hydrogen technology, South Africa could have a solid claim to be a major player in the new hydrogen economy - joining the likes of Australia, Saudi Arabia and Chile, which also have high renewable energy potential.

"Hydrogen's versatile application makes it a leading solution to the carbon challenge of our times," Formby said. *Enquiry no: 7*

Medical waste surge expected during pandemic third wave

WASTE and recycling company Averda, which has extensive medical waste treatment operations in South Africa, reports that they treated over 600 000 kilograms of Covid waste in January this year.

"This represents a significant increase in volumes from previous months which we were used to as a company," says Justice Tootla, Managing Director of Averda South Africa. Only a month prior, in December 2020 at the peak of the second wave, this number was just over 50% less, with 350 415 kilograms of Covid waste collected and treated.

Tootla added that even though February numbers have shown a decrease and are predicted to continue to drop over the next month, healthcare facilities should use the second wave as a baseline in order to prepare itself for the next wave.

Many experts are forecasting that the rate of COVID-19 infections and deaths in the third wave might be worse than the first two. This includes having enough certified waste containers for items like masks, surgical gloves, and the protective clothing elements of PPE gear, to comply with new regulations.

"On top of that we need to keep in mind that the medical waste landscape will once again change with a further increase in the volume of 'sharps' as a result of the vaccine roll-out," adds Tootla.

With that in mind, Averda have already made provision with all their medical waste container suppliers for the increase in the demand for sharps containers.

"We have already commenced with preparations for the influx of this type of medical waste and will be able to deal with the increase in demand, the collection of the waste as well as the safe disposal thereof. We have dealt with many pandemics and hazardous outbreaks over the years such as the listeriosis outbreak in 2018 and Cholera outbreaks from neighboring countries, so treatment facilities have enough capacity to handle the waste accordingly," adds Tootla.

It is also important that hospitals and everyone administering the vaccine follow the prescribed guidelines, use the correct containers to dispose of used needles and follow operational procedures, minimising the risk to the staff responsible for handling this type of waste.

Enquiry no: 8

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No quick fix solution to SA logistics industry's Covid contagion

WHILE there has been a slight uptick in domestic and international cargo traffic in recent weeks, South Africa is struggling to counter the fallout of the Covid-19 pandemic and lockdown responses, and there will be no "quick fix" to the situation.

That's according to industry body, the South African Association of Freight Forwarders (SAAFF), which said overall maritime cargo for January 2021 was down 15% compared to the same time last year.

Global container imbalances, port congestion and poor efficiency have taken their toll, and the hoped-for bump in cargo traffic after the "hard" level 5 lockdown was lifted did not materialise. February 2021 proved to be a much-improved month for air cargo, as the

public started to adopt more positive sentiment towards flying both domestically and in Southern Africa.

However, SAAFF warns the short-term outlook is not expected to improve while the operational curfew persists, even if the medium-term outlook looks slightly better.

One of the hardest hit areas has been road freight. As documented in the media and industry publications, severe cross-border transit delays were experienced on the North-South corridors. According to SAAFF, in one week in February the average cross-border queue time at Beit Bridge averaged 19.6 hours, costing the industry an estimated R450-million.

The air, sea and road freight environment has been extremely challenging for logistics

companies, to be sure.

Despite these circumstances, they have found a way to not only maintain operational standards, but pursue new ways of thinking to deliver to clients.

Marcus Ellappan, the Director of Road Freight at Bidvest International Logistics (BIL) said the company had been successful in negotiating the turbulent waters of the pandemic thanks to its approach of limiting wastage. From top management down, everyone in the business had taken a "hands-on" approach to ensure that nothing is left to chance and stakeholders are engaged every step of the way.

"There are solutions in the detail. You've got to look at the low hanging fruit and getting quick wins like saving on fuel costs. Ask

if you getting the best fuel consumption? Are you getting the best deal on fuel purchases?" Ellappan said.

"Investing in skills is a no-brainer. The returns are exponential with a skilled workforce. You also need to engage, engage and engage with clients. You need to understand their business and look for win-win scenarios."

He said a lot of waste occurred in supply chains simply because there was a lack of engagement. He also recommends automating manual tasks where possible. "This creates a fresh look to business and also eliminates conventional methods of doing things."

The United Nations Conference for Trade and Development (UNCTAD) notes in that in 2020 there had been continued migration towards e-commerce, with online purchases increasing by between 6% and 10% across product categories. This fact is not lost on Ellappan, but a balance between benefitting from e-commerce and exercising vigilance needs to be struck.

"We envisage a lot more e-commerce platforms for booking vehicles popping up, but one needs to be wary of some of these platforms," he said. "Without the correct compliance, this could result in more road freight incidents which include crashes, hijacking, unfair labour practices and uncompetitive transport rates which does not level the playing fields from a compliance perspective."

"While leveraging off technology is definitely the way to go, road freight has many variables that need to be managed legally." Enquiry no: 9

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Top SA security tech company expands into East Africa

AURA, a leading security and medical response platform, has announced its imminent expansion into Kenya which will be led by its new General Manager, Hilary Itela (pictured).



Partnering with KK Security, owned by GardaWorld, Aura will offer its emergency and medical response services in Nairobi and Mombasa.

Aura CEO Warren Myers said the intention was to address the fragmented and idle response capacity in Kenya while also democratising access to critical services by making them more widely available and more affordable than ever before.

With over 15 years' experience in various management roles in East and Central Africa, Itela has expertise in security, e-commerce, logistics, pharmaceuticals, FMCG and renewable energy.

In addition to working closely with Kenyan partners to build a large and effective response network, Itela will be responsible for growing the Aura business footprint across the region to ensure that smart security solutions are available to all.

"I look forward to shaping a business that will contribute to the safety and security of the community and create employment opportunities that positively impact the economies in which we operate," he said.

Myers said, "We are excited to have someone of Itela's calibre join our team as we explore the many unique opportunities within the East African market. Kenya has a strong, but fragmented private security and emergency medical industry."

He said the expansion provided an ideal opportunity for Aura to create an effective and efficient response network. "Similar to South Africa, Kenya is plagued by significant crime issues, in particular, road safety, street crime, home invasions, burglaries and carjackings. With a high smartphone penetration rate, we are able to provide our users with affordable and accessible on-demand security and medical response and help keep people in those areas safe."

He added that the company would in the coming months be focusing on further global expansion in territories with similar inefficiencies to South Africa. Enquiry no: 10

INSTRUMENTATION, MEASUREMENT & CONTROL

Turnkey energy engineering provider promises project peace of mind

At a time when project budgets are increasingly under pressure, as are delivery timelines, it makes more sense for infrastructure projects to trust one vendor that offers a turnkey solution to lead and manage every step of the process, from early ideation and planning to feasibility and engineering studies, to sourcing materials, manufacturing, and ensuring post-project success.

That's according to Eaton, which says its Engineering Services and Systems (ESS) team has the expertise and resources to design and manage entire power and energy projects from start to finish, achieving a



safer, more reliable and cost-efficient power system and the convenience of a single point of contact to reduce risks to schedule and budget.

"A single point of accountability for all technical, financial and commercial co-ordination also creates a relationship of trust, with no opportunity for budget creep or resources shrinkage," the company said in a statement, adding that its expertise in energy generation, transmission, and storage helps clients identify cost efficiencies and enhances the implementation process.

"Furthermore, working with a single vendor... means that project

owners reduce technical and commercial risks that are typical of multiparty projects where timelines could be derailed, and budgets adversely impacted by one of many suppliers not honouring their commitments."

During the vital design process, the company offers engineering and consulting services that focus on understanding the client's requirements, and in turn, creating innovative strategies for power systems that respond directly to business needs. These services include complete system analysis, project co-ordination, specialised applications, and training.

"When the time comes to break ground and build, Eaton provides cost-effective on-time system improvements via single point of contact, with personnel deployed in the field to complete projects, whether it's an existing installation that's being upgraded, or a brand-new facility that's being built."

Services include turnkey project management, field services such as maintenance and emergencies, aftermarket service and upgrade, power quality services, and services for components and applications.

Enquiry no: 11

New digital maturity tool to help companies target transformation priorities

MANUFACTURERS seeking to leverage new digital technologies to transform their businesses can turn to a new online tool to self-assess their operations and identify opportunities that deliver the highest potential return on investment.

According to global technology and software company Emerson, its newly launched Digital Maturity Quick Index builds upon several well-established maturity models and the company's experience consulting and partnering with clients on their digital transformation programs.

Nathan Pettus, President of the company's Operational Certainty Solutions business, said the index is an interactive diagnostic tool designed to help companies benchmark their competitiveness against industry peers. In addition, he said, the tool will uncover their biggest potential areas for improvement and technology investments by analysing the largest costs and key performance initiatives.

The tool scores operational maturity across key domains including reliability, energy and environmental sustainability, production, safety, security, systems and data, and organizational effectiveness.

"The companies with the most success tackling their challenges and seeing measurable performance improvements implement a thorough assessment to get an accurate picture of their digital readiness," said Pettus.

"Our new Digital Maturity Quick Index is a tool to help customers in their journey to execute a digital transformation roadmap that addresses specific challenges, is adaptable to dynamic market demands and provides the



greatest return on investment."

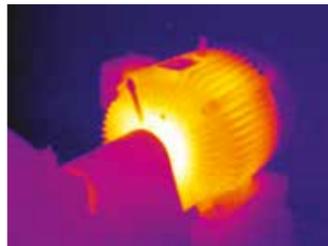
The tool operates using Emerson's Digital Transformation Roadmap at its core with input supplemented from the industry recognized BioPhorum Digital Plant Maturity Model and the Smart Industry Readiness Index. It combines specific company financials and business objectives, allowing organisations to compare themselves against others in their industries and have a clear picture of where their digital transformation programs can have the greatest impact.

From there, Emerson's 100+ professional services consultants offer extensive domain expertise, experience and tools to help customers review their digital transformation objectives and develop and implement a multiyear roadmap.

Over the coming months, the company will continue to enhance the index with a focus on sustainability, analytics and data management assessments, Pettus said.

Enquiry no: 12

Thermal imagers help make maintenance proactive



COMTEST, local representative of Fluke, has announced their new TiS55+ and TiS75+ thermal imagers, which it's billing as an "easy-to-use series of infrared cameras that easily transform plans for preventive maintenance (PM) programs into reality".

According to a statement from the company, these cameras offer technicians and contractors who need quality images and feature-rich cameras, an option for their troubleshooting, intermittent inspection, and preventive maintenance needs.

"Technicians make many inspections daily, and it can be hard to remember what was seen and the inspection location. The new technology Fluke TiS55+ and TiS75+ come with built-in personal assistants, meaning the old clipboard can finally be ditched and technicians can have all the information needed, embedded in the images saved," the company said.

This includes recorded voice annotations of up to 60 seconds per thermal image to help identify exactly what is seen in real time and

the ability to take photos of asset numbers and other identifiers and use as a reference when looking at the thermal image on a computer.

Another feature is asset tagging, which lets the user sort the thermal images by asset, scan a QR code on the asset, then start capturing thermal images. Images will automatically be sorted by asset and the user can then connect the camera to a computer to view them.

Focus is one of the most important parts of a thermal image and the new thermal cameras have both manual and fixed focus modes. Seasoned thermographers can use the manual focus wheel to adjust the image based off how far they are from the target, while fixed focus allows quick scans and is useful for users new to thermography.

Fluke has included a dew-point calculation in the TiS75+ thermal camera, a feature useful for building inspectors.

Enquiry no: 14

GLOBAL industrial automation and digital transformation company, Rockwell Automation, has been recognised by Ethisphere Institute as one of the 2021 World's Most Ethical Companies.

The institute defines and advances standards of ethical business practices and its annual list recognises companies which it says "understand the importance of leading, making hard but values-based decisions, and commitment to integrity".

Rockwell Automation has been recognised 13 times and is one of only two honorees in the Diversified Machinery industry. In 2021, 135 honorees were recognized spanning 22 countries and 47 industries.

"We're honored to once again receive this recognition from Ethisphere," said Blake Moret, Chairman and CEO of Rockwell Automation. "Our commitment to integrity is a foundational element of our culture, ingrained in everything we do. And that culture is shaped by great employees who can and want to do their best work."

"While addressing the tough challenges of 2020, we saw companies lead – above all other institutions – on earning the trust of stakeholders through resilience and a commitment to ethics and integrity," said Ethisphere CEO,

Automation giant again among 'world's most ethical companies'

Timothy Erblich.

"The World's Most Ethical Companies honorees continue to demonstrate an unwavering commitment to the highest values and positively impacting the communities they serve. Congratulations to everyone at Rockwell Automation for earning the World's Most Ethical Companies designation."

The assessment process includes more than 200 questions on culture, environmental and social practices, ethics and compliance activities, governance, diversity and initiatives to support a strong value chain.

The process serves as an operating framework to capture and codify the leading practices of organisations across industries and around the globe. This year, the process was streamlined and the question set expanded to gauge how applicants are adapting and responding to the global health pandemic, environmental, social, and governance factors, safety, equity, and inclusion and social justice.

Enquiry no: 13



The PMD profiler: with up to 10 target profiles

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PUMPS, VALVES, PIPES & FITTINGS

New high-power pump makes Africa debut

WITH the launch of the Grundfos XL CR 185 vertical stainless steel multi-stage pump, customers can achieve higher flow rates and delivery heads while still achieving optimal energy efficiency.

That's according to Niren Rohanlal, Senior Regional Product & Solutions Manager - CBS Advanced Core & Systems - India, Middle East and Africa at Grundfos, who said that this extra-large addition to their CR range "pushes the limits of pumping capability," with a maximum flow rate of 240 m³/h and the ability to generate pressures of up to 40 bar.

"The pump's maximum head is a

remarkable 400 m, which is roughly the height of the Empire State Building in New York. To reach these demanding heights, it can be fitted with an electric motor of up to 200 kW in size."

Rohanlal said the XL CR 185 had wide application as a pressure booster in industry, mines and commercial buildings, as well as for water utilities requiring high pressure delivery and that an important advantage of the vertical orientation of this pump range was its reduced footprint.

Where numerous pumps are employed in pump stations, this smaller footprint means that floor area can be made more compact.

This cuts the cost of civil works in the construction of these buildings.

"The basic modular design of the pump allows stages to be increased as necessary. The reduced design complexity means easier access to components when servicing and maintaining the equipment."

Rohanlal said the new model is manufactured by Grundfos in Denmark, where it is thoroughly tested before being dispatched to South Africa for the sub-Saharan African market. The local ISO-certified Grundfos facility in Meadowbrook east of Johannesburg locally assembles CR pumps up to the CR 155 model.

Enquiry no: 15



A Grundfos CR pump being loaded for delivery to a customer

Grease injector raises productivity in harsh applications

THE latest addition to SKF's single-line lubricant injector range contributes to increased productivity in tough applications.

That's according to SKF Product Manager Jordan Butler, who said the new SKF Lincoln SL-6 injector has been

designed with ease of use and maintenance in mind, and boasts outstanding leak protection and service life, even with harsh EP (extreme pressure) greases.

The SL-6 can easily be retrofitted to existing single-line pump systems.

"With higher demands on productivity, less time for maintenance and low tolerance for unplanned stops, lubrication performance is an important key to machine performance. Reliable lubrication solutions are a must to get the uptime you have invested in."

Innovations in the SL-6 are focused on supporting the harsh environments for which it is designed, including in dump trucks, excavators, and other mining and construction equipment.

Quick maintenance features include a highly visible red indicator pin, an adjusting screw requiring only basic tools, and a hex-shaped body which maximizes working space, making it easy to handle and work with.

For optimally effective lubrication, its vent speed is faster than

that of any competitor, Butler said. This is aided by a daisy-chain effect: as soon as each injector finishes venting, it helps the next one to complete its cycle by consuming grease from the main line.

Improved sealing reduces the risk of lubricant bypass.

"In the unlikely event of a failure, the injector's closed structure channels bypass lubricant to the bearing. Repair is then possible by simply replacing two components."

Commenting on the benefits of automatic lubrication, Butler said, "Lubricating manually takes extra time, requires the machine to be stopped, and tends to swing between wasteful initial over-greasing and, over time, damagingly low lubrication."

"The SL-6 injector and SKF Lincoln lubrication system help customers to take a giant step toward increased productivity."

"With less maintenance, less time spent on manual greasing, reduced grease consumption and longer component life, customers will soon see a return on their investment."

Enquiry no: 16



BY GAVIN POTE

MOST people, when asked what cavitation is, will answer "air bubbles in the inlet water of the pump". This is only partly true. Removing any possibility of pipe leaks is important, but this is actually the least common cause of cavitation.

As the pump piston moves backwards to suck water into the pump, it creates a partial vacuum.

If the inlet feed water pipe is too small or too long, or has too many elbows and tees in it, this partial vacuum becomes too great and the water evaporates, forming bubbles of water vapour (not air bubbles).

These bubbles explode with force. And when the piston changes direction to pressurise the water, they implode.

This damages conrods, valves and seals. So, why does this happen?

What you need to know about cavitation in piston pumps

The simple explanation is that water on earth remains in place because the weight of air above it causes one bar pressure on the water surface at sea level.

Take a glass pipe of 20m in length with a piston and a rod fitted to enable you to pull the piston to the top of the pipe. Hang it over a 20m high jetty with the bottom end in the sea. When the rod is pulled up, water enters the bottom of the pipe and rises with the piston.

However, when it reaches the 10m mark, the water will not rise any further, but appears to "boil", forming bubbles of water vapour (not air bubbles). That, in essence, is cavitation.

At the 10m mark, the pressure in the pipe is minus one bar, you have just reached the point where the weight of the air has been equalled.

When the original explorers of Mount Everest tried to boil meat in water when halfway up the mountain, they discovered that the pot started to boil at 50°C (there is very little air at these elevations) leaving the food uncooked. To overcome this problem, the pressure cooker was invented.

At normal atmospheric temperatures, piston pumps should not cause

any issues as long as there are no restrictions in the inlet plumbing. But when the water gets hot, it "boils" easier, as the vacuum caused by the pistons forms.

A typical error is when a "hot water" piston pump is used to suck the 70°C water from a restricted source. Sure, the seals are designed for this temperature, but cavitation will destroy them unless the hot water is pressure fed (over one bar) to overcome the vaporisation of the water under partial vacuum.

Even cold water should be gravity fed. Another common error is when the bypass water is returned to the inlet of the pump. As the water cycles it slowly builds up heat from friction in the unloader valve. This heat is cumulative.

A problem in hard water areas, especially when the water source is a borehole, is that when the water vapour bubbles form, calcium will deposit in the pump (like the fur in a kettle) to such an extent that the valves will cease to work, and in extreme cases, will break conrods. A water softener added to the feed can help to stop this from happening.

Gavin Pote is Director at Hawk

New suction trailer a troubleshooting trailblazer

WERNER Pumps has created a new trailer-mounted 6-inch centrifugal pump unit which it says can be used to pump water, as well as solids, in maintenance and troubleshooting applications, such as clearing man-holes or dealing with sewage spills.

"We developed this non-clogging, self-priming sewage pump unit primarily to help meet the needs of our existing customers, many of whom require this type of equipment to complement their larger jetting trucks they have procured from us," said MD Sebastian Werner.

"We do our best to be a one-stop-shop for our customers, and we've seen that there's clearly a demand for this type of machine as we've already sold several in the few months since we built the first one."

Like all of the trucks and trailers in

the Werner Pumps range (excluding the Rapid Response Vehicle), this unit is 100% locally manufactured at the company's premises in Springs.

It features a heavy-duty diesel tank, 4-cylinder air-cooled Kirloskar engine, SP6 self-priming sewage pump, heavy-duty strobe light and a side-mounted control panel. Designed for stable performance and reliable operation, the unit operates at 750-1450rpm with a flow rate of 2084-4167 L/min, between 5 and 30 kilowatts.

Werner said its back-pull-out construction makes it convenient to use in a variety of applications, from pumping rainwater and common sewage to use on municipal drainage projects and construction sites.

"It's also suited to use in the paper, textile, food processing, chemical, util-



ities, mining, tanning and water purification industries," he said adding that the lead-time on one of these units is roughly three weeks from order to delivery.

Enquiry no: 17

Top certification for automation components

VALVE specialist Gemü has had a further three of its intelligent automation components certified with UL approval:

The Gemü 1235 and Gemü 1236 electrical position indicators and the Gemü 1436 eco cPos positioner.

The UL certification mark is valid for the USA and Canada.

It is practically a prerequisite for all machines and plant components that are used or exported there.

The compact Gemü 1235 and Gemü 1236 electrical position indicators feature the conventional discrete indication of the process valve position (closed or open) as well as IO-Link communication.

The products are available in plastic



and stainless steel. The Gemü 1436 eco cPos positioner electronic system has been reduced to the core functions.

"Together with the quick commissioning function (speed-AP), this makes for a positioner that is incredibly easy to use and suitable for control tasks with basic requirements," the company said in a statement.

Enquiry no: 18

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How high-efficiency motors and drives help combat climate change

GLOBAL industrial technology company ABB has called on governments and industry to accelerate adoption of high-efficiency motors and variable speed drives to help combat climate change.

It has backed its call with the release of a white paper, titled "Achieving the Paris Agreement: The Vital Role of High-Efficiency Motors and Drives in Reducing Energy Consumption", which it says reveals the potential for significant energy efficiency improvements in industry and infrastructure enabled by this technology.

Morten Wierod, President ABB Motion said that electric motors – and the variable speed drives which optimise their operation – are mostly hidden from public view, but they are embedded in almost every built environment.

"They power a vast range of applications fundamental to our modern

way of life, from industrial pumps, fans and conveyors for manufacturing and propulsion systems for transportation to compressors for electrical appliances and heating, ventilation and air conditioning systems in buildings."

Wierod said motor and drive technologies have seen exceptionally rapid advancement in the past decade, with today's innovative designs delivering "remarkable" energy efficiencies. However, as the white paper reveals, a significant number of industrial electric motor-driven systems in operation today – in the region of 300 million globally – are inefficient or consume much more power than required, resulting in monumental energy wastage.

"Independent research estimates that if these systems were replaced



with optimised, high-efficiency equipment, the gains to be realised could reduce global electricity consumption by up to 10 percent." In turn, this would account for more than 40 percent of the reduction in greenhouse gas emissions needed to meet the

2040 climate goals established by the Paris Agreement.

"Industrial energy efficiency, more than any other challenge, has the single greatest capacity for combatting the climate emergency. It is essentially the world's invisible climate solution," Wierod said.

"For ABB, sustainability is a key part of our company purpose and of the value that we create for all of our stakeholders. By far the biggest impact we can have in reducing greenhouse gas emissions is through our leading technologies, which reduce energy use in industry, buildings and transport."

He added that considerable steps had already been taken to support the uptake of electric vehicles and renewable energy sources and the company believed it was time to do the same for an industrial

technology that promised to deliver even greater benefits for the environment and the global economy.

"The importance of transitioning industries and infrastructure to these highly energy efficient drives and motors to play their part in a more sustainable society cannot be overstated. With 45 percent of the world's electricity used to power electric motors in buildings and industrial applications, investment in upgrading them will yield outsized rewards in terms of efficiency," he said.

To take advantage of the tremendous opportunities afforded by energy efficient drives and motors to reduce greenhouse gas emissions, ABB urged stakeholders to act decisively. It said public decision makers and government regulators needed to incentivise the rapid adoption of this technology.

Enquiry no: 19

Centrifugal dewatering surface pump solutions



ATLAS Copco's rugged PAS dry self-priming and PAC H high head dewatering surface pump series features smart design, cutting-edge technology, quality components and advanced manufacturing.

That's according to David Stanford, Business Line Manager for Atlas Copco Power Technique's Portable Products, who said the range was a prime example of the company's commitment to developing smaller, lighter products that are easy to use, easy to move and easy to maintain.

Also available in a canopy version, the PAS range comprises four high flow (HF) and five medium flow (MF) models delivering a maximum flow capacity of 2100 m³/h, with a maximum head of 75 m and an outlet size of 100 - 300 mm.

Stanford said these diesel pump systems are equipped with several features that render them ideal for mining applications.

"With the ability of working with clean or dirty water and handling trash and fibrous materials with ease, these pumps can pump, raise and transport liquids with solids of up to 100 mm in suspension over long distances without the risk of clogging. This exceptional solids-handling capability is due to the inclusion of a centrifugal pump with a semi-open impeller and an abrasion-resistant pump casing."

Stanford added that the PAS pumps' dry prime capabilities enable the user to start pumping immediately with a simple flip of the switch, ensuring reliable operation in stringent conditions where start-up can often present a challenge.

The pump system's high-capacity diaphragm pump makes automatic priming possible; the air in the pump is separated from the liquid by the large SuperDuo separator which is then sucked by the vacuum pump.

Moving on to Atlas Copco's PAC H high head series, Stanford said these "high value" pumps,

part of the company's Head series, combine performance and efficiency.

Featuring a maximum head size of 150 m, a maximum flow of up to 1200 m³/h and a solids-handling capability of up to 89 mm, he said the PAC H series is particularly suited to industrial applications such as water transfer and will benefit industries such as oil and gas, quarrying, surface mining and construction as well as the municipal sector.

"Equipped with a high efficiency hydraulic end, our pumps consume very little fuel irrespective of the operating conditions. Moreover, thanks to a modular design, one pump is capable of covering multiple requirements. With fewer pumps required and fast easy manoeuvrability thanks to compact dimensions coupled with a light weight, uptime and productivity is boosted."

The hinge kit available on the PAS range, simplifies and speeds up pump maintenance. The pump is fitted with a hinged cover that provides fast easy, access to components, enabling an industry-leading three-minute clean up and restart. The service and maintenance process on the PAC H pumps is facilitated as wear components can be serviced or replaced without the need to dismantle the pump.

These include Atlas Copco's semi-cartridge seal design, hinge kit, bolted wear plate and link belts. The semi-cartridge seal, which is normally an optional extra on other pumps in the market but standard on the PAC H, makes the lip seal and impeller easily accessible.

"The innovative hinge kit includes a 'swing door' that allows quick and easy access to the pump's internal workings and a single bolt to remove the impeller," Stanford said, adding that by using link belts to enable changeovers without having to dismantle the entire wet end of the unit reduces MTTR (mean time to repair) by up to 30%.

Enquiry no: 20

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AGRICULTURE

Does your agribusiness qualify for a slice of this R350m investment pie?

PRIVATE equity company Moshe Capital Fund Managers is actively seeking to invest R350 million into diverse companies with a solid presence in their sectors, including agriculture.

Founder and CEO Mameetja Moshe (pictured) said the firm has secured a funding commitment from FNB Commercial and has entered into a partnership agreement with RMB Ventures, both divisions of FirstRand Limited.

"Despite economic challenges, there are several opportunities for investment and growth in various sectors such as manufacturing, industrial, mining products or services and secondary agriculture in South Africa. We predominantly invest in estab-



lished businesses with enterprise values of R200 million or more," she said, adding that the calibre of funders makes it possible to increase available funding should a detailed assessment process reveal compelling prospects.

Moshe Capital Fund Managers is a wholly owned subsidiary of Moshe Capital and is 100% black women owned. Moshe Capital currently has four investments across various sectors. Named by ABSIP as corporate finance team of the year in 2019, Moshe Capital's investment approach seeks established businesses based primarily in South Africa, but with the potential to grow into sub-Saharan Africa and internationally.

"When considering investments, we look for a track record of at least three years of consistent returns and EBITDA of above R25 million," said Moshe.

The degree of active involvement in each investment differs depending on the potential and requirements of each business. Moshe Capital is sector agnostic and is looking to enter into long-term partnerships.

"We believe in entrepreneurship by partnership. We are keen on businesses that provide returns on investments of more than 25% over five years or more. We fully appreciate that Covid-19 has had a negative impact on the valuation of most companies and will take that into account when evaluating opportunities."

In addition to funding, Moshe said private equity partners add significant value in other

areas. These include serving as sounding boards for business strategy, assisting with further expansion or additional liquidity, and navigating difficult economic realities like those brought about by Covid-19.

"We've worked closely with our existing partners over the past year to recapitalise balance sheets, improve the robustness of cashflows and even pivot businesses into new areas."

Moshe said the firm preferred to invest in qualifying businesses with a commitment to job creation, economic empowerment and with social and environmental impact. Given that businesses need to be established with a proven track record, Moshe is not looking to invest in start-up and green fields businesses, or business rescue and turnaround cases.

Enquiry no: 21

Motor graders make Southern Africa debut

HYUNDAI motor graders – which are available in Southern Africa for the first time – offer high productivity, precise control, greater safety and fuel efficiency.

That's according to Ross Collard, Managing Director of HPE Africa, exclusive distributors for Hyundai Construction Equipment in Southern Africa, who said the machines are suitable for operation in various industries, including road works, mining, construction, agriculture and landscaping.

"Through the launch of Hyundai HG190 motor graders, the local market now has access to a wider range of Hyundai construction equipment from HPE Africa. All Hyundai machines are supported by our dedicated technical and after-sales teams," Collard said, adding that the launch also presented opportunities to supply Hyundai machines to an extended customer base.

He said Hyundai wheeled motor graders offer users many benefits, including safety on

site, easy mobility, fast and efficient performance and manoeuvrability in tight spaces. To enhance environmental protection, precise control features minimise disturbance to the soil.

The Hyundai HG190 motor grader series has power ratings up to 142 kW, an operating weight of 15.6 ton and a 4,268 mm moldboard.

The mechanical inline fuel injection system provides precise throttle control, delivering faster work speeds, with high horsepower. Other benefits include ZF-technology powershift transmission, which is well matched with a Cummins turbocharged engine, for reliable and easy operation and low fuel consumption, in all types of working conditions.

The drawbar of the HG series has a robust A and U-shaped frame for durability and precise blading control. The moldboard provides optimal curvature that helps move all soil types quickly and efficiently and wide tyres (17.5-25 12 PR L3) ensure high stability. The heat-treated rotating ring structure is equipped with a



turntable of four inner gear guide types, which ensure smooth 360° rotation.

Important features for easy and precise operator control include lever and pedal throttle controls, an adjustable control console, a suspension seat and tiltable steering wheel.

"For improved safety, the spacious cab has been designed with a side pillar layout for excellent all-round visibility and a well-positioned blade linkage provides an unobstructed view of the moldboard and front tyres."

Enquiry no: 22

Further strong GDP growth for agriculture

BY PAUL MAKUBE

THE latest Statistics South Africa (StatsSA) GDP update shows further strong growth in agriculture of 5.9% (annualised seasonally adjusted quarterly) in the fourth quarter of 2020, bringing the overall 2020 performance to 13.1%.

The strong fourth quarter agriculture outcome was underpinned by increased production of animal products which account for over 50% of the country's agriculture gross producer value. The animal products defied the seasonal demand pressures during winter as well as the COVID-19 disruptions and came out stronger as prices were resilient across most categories.

Favourable production conditions, strong export demand, and the favourable rand exchange rate helped boost overall agriculture performance in 2020 despite the COVID-19 challenges as the sector was declared an essential service.

For example, export revenues increased 3% (year-on-year) to a three-year record of US\$10.2 billion with maize exports for the second half of 2020 increasing by over 200% relative to the 2019 levels.

The citrus industry also recorded a fantastic year with better prices and strong volumes as demand spiked in major export destinations.

The 2020/21 La Nina weather further favoured agriculture with good rains across the country. We expect another good year for the agriculture sector. The recent harvest estimates of the country's biggest staple, maize, point to a potential crop north of 16 million for 2021.

Horticulture and livestock conditions are conducive to further stellar growth in agriculture.

Paul Makube is Senior Agricultural economist at FNB Agri-Business

Slew of upgrades for harvester front-end equipment

JOHN Deere Front-end equipment has received updated harvesting solutions in-line with improved performance, up time and cost of operation.

That's according to a statement from the company, which said technology included in all the latest John Deere front-end equipment is a Header Control Unit (HCU) that communicates seamlessly with the combine.

"The HCU saves head-specific factory calibration settings and collects and sends header-width information to the combine for accurate yield mapping, minimizing set up time and providing an accurate maintenance schedule," the company said.

The range of front-end equipment includes a Hinged Frame Rigid Cutter Bar, Drapers, RDF HydraFlex¹ Drapers, a BP15 Belt Pickup Platform and Corn headers Folding (CF) and Rigid (CR).

John Deere HDR Rigid Cutter Bar Drapers are ideal for small grains and canola growers



who want to maximise their harvester's hectares per hour across various crops, changing conditions and uneven or rolling terrain, while capturing more grain.

The HDR has a hinged frame that provides unmatched terrain-following capability, with an exceptional wing range and a uniform cut height. It sweeps the down or lodged crop across the cutter bar to recover more crop.

HDR Drapers are available in 30ft, 35ft, 40ft and 45ft cutting widths to bring more crop into

your combine with each pass. The company said the upgrade from the 40ft draper to the new, larger 45ft version, enables farmers to cover around 10% more ground each day for the same number of passes.

John Deere RDF (HydraFlex Drapers) are built on the "field-proven cutting technology" of the existing John Deere 700FD, while providing new features to reduce grain loss. All RDF HydraFlex Drapers feature a new Two-Speed Center Feed Section that lets operators slow down the feeding drum and center feed belt speed by 20% compared to the 700FD. They also feature the proven 10 cm double-cut, dual-drive shaft HydraFlex Cutter bar.

"The knife system provides industry-exclusive cutting performance by making 1,980 cuts per minute."

John Deere is also offering the BP15 Belt Pickup for small grains and canola growers who need to harvest more hectares per hour.

Enquiry no: 23



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COMPANY & PRODUCT NEWS

Automaker's 'breath of life' to SA public hospitals

MERCEDES-Benz South Africa (MBSA) has donated 1 000 non-invasive Continuous Positive Airway Pressure (CPAP) respirator devices, in support of the Department of Health's ongoing response to the coronavirus crisis.

Half of the devices went to hospitals in the hardest hit province, the Eastern Cape, in October. The other 500 were donated recently to the department for distribution to seven other provinces.

MBSA CEO and Executive Director Manufacturing Andreas Engling said the provision of the CPAP respirators was timely. "These devices will support and better equip public hospitals and patients to deal with potential future surges of COVID-19. During the pandemic, a priority for Mercedes-Benz South Africa has been the preservation of the health and safety of our employees and the communities in which we operate."

The UCL-Ventura CPAP devices were originally re-engineered by a project team consist-



ing of engineers from Mercedes-AMG High Performance Powertrains (Mercedes-AMG HPP) and University College London (UCL) as well as clinicians from University College London Hospital (UCLH). The UCL-Ventura team made the designs and manufacturing

data of the CPAP device freely available to download to support the global response to COVID-19.

With the recent surge of infections, the UCL-Ventura CPAP respirator devices have proven to assist with keeping coronavirus patients with respiratory difficulties out of intensive care and also reduce the burden on public health facilities.

The CPAP respirator devices assist patients with serious respiratory problems to breathe more easily, when oxygen has proven insufficient. The CPAP devices are non-invasive and provide a constant, steady pressure to keep the lungs expanded. Hospital data has indicated that approximately 50% of patients given CPAPs have avoided the need for invasive mechanical ventilation.

With this in mind, Mercedes-Benz South Africa took the decision to roll out the UCL-Ventura CPAP respirator to support the health system in South Africa. In less than 100 hours from the initial discussions about the concept,

the UCL Ventura project group advanced to the production and testing of the first prototype.

To ensure rapid manufacturing of the CPAP devices, Mercedes-AMG HPP repurposed its technology centre and reprogrammed machinery to manufacture 10 000 CPAP devices.

Additionally, to support the international fight against COVID-19, designs and manufacturing instructions were released at no cost and have since been downloaded by over 100 countries worldwide.

The CPAP devices donated to the National Department of Health have been approved by the South African Health Products Regulatory Authority (SAHPRA).

Required training on how to use the CPAP respiratory devices will be provided to all beneficiary healthcare front line staff in national, provincial tertiary, regional and district hospitals across the Eastern Cape, Gauteng, Free State, KwaZulu-Natal, Mpumalanga, Northern Cape, Limpopo and North West.

Enquiry no: 24

Renewables now produce more power than nuclear, latest stats reveal

THE Council for Scientific and Industrial Research (CSIR) has released its annual statistics on power generation in South Africa for 2020.

The scope of the latest figures was expanded to include all utility-scale generating technologies including coal, nuclear, hydro, solar photovoltaics (PV), wind, Concentrating Solar Power (CSP), hydro, pumped storage and diesel fuelled open-cycle gas turbines (OCGTs).

"In the unprecedented year that was 2020, system demand reduced by 11.8 Tera-Watthours (TWh) compared to -5.1% in 2019 relative to pre-lockdown forecasts," the CSIR said in a statement.

It's clear from the statistics that coal still dominates the South African energy mix but significantly, the contribution from variable renewable energy technologies (solar PV, wind and CSP) surpassed the contribution from nuclear energy for the first time.

"Based on a range of data sources but driven by a recently established Eskom data portal in the interests of power system data transparency, new insights are made possible on technology specific daily, weekly and monthly electricity production, actual load shedding experienced in 2020 as well as flexibility needs of the power system."

Specific analysis into the COVID-19 induced lockdown and how this affected national level system demand and the Eskom fleet Energy Availability Factor (EAF) is also provided.

Enquiry no: 26

Tech titan rolls out 'Seamless AI Life' strategy in SA

HUAWEI has unveiled what it's dubbed its Seamless AI Life strategy which promises to deliver an intelligent experience.

Speaking at a recent Huawei Better Together 2021 virtual event, the company's local Consumer Business Group General Manager Jun Sun said the company's strategy for the hyper-connected era in South Africa was mainly focused on smartphones, wearables and PCs.

"Huawei has remained committed to developing these offerings across South Africa, which aligns with our global vision of delivering an intelligent experience to consumers in South Africa across all scenarios, including health, fitness and overall lifestyle."

Commenting on the company's performance in the region, he said, "Our journey from our beginnings to where we are now in South Africa has been nothing short of phenomenal. South Africa is one of the most important pioneering markets for Huawei."

"We are committed to continue using our technology to improve the lives of South Africans around the country".

Huawei SA's Chief Technology Officer Akhram Mohamed said, "The promise of technology has always been envisioned as a smooth and seamless process between your devices and the services they interact with. We at Huawei are positioning ourselves to be at the forefront of delivering just that with our Seamless AI Life Strategy".

Enquiry no: 27

Survival mode: SME confidence nose-dives after flat festive season

WHILE confidence levels of small-and-medium sized enterprises (SMEs) seemed to rebound during the second half of 2020 as some semblance of normality returned after lockdown restrictions were eased, the economic aftershocks of COVID-19 were felt across the board.

With increased job losses and restrictions on international travel, local consumer spending and foreign visitor numbers declined during the fourth quarter of 2020, resulting in dwindling SME business confidence.

This is according to the 2020 quarter four results of the Business Partners Limited SME Index, which revealed that 75 percent of respondents found the festive season significantly quieter than usual. The survey results also bring into focus the crippling effects of COVID-19, with 71 percent of respondents indicating that the pandemic has negatively impacted their level of business confidence for 2021.

Recently released tourism data supports this sentiment, as a meagre 52,711 international visitors passed through Cape Town International Airport in December 2020, compared to 281,382 in December 2019. To add insult to injury, the year ended on a low note as government reinstated level 3 lockdown

restrictions in response to the growing threat of a second wave of COVID-19.

Commenting on the fourth quarter results, Mark Paper, Chief Operating Officer at Business Partners International, pointed to how concerns over survival were growing in urgency.

"35 percent of SMEs surveyed noted that their business is struggling and may not survive due to COVID-19 disruption – a 10 percentage increase from the third quarter of 2020. While a third and even fourth wave are anticipated, we trust the vaccine roll-out will not only protect South African citizens from the COVID-19 health risks, but that it will protect businesses against its devastating economic effects."

The 2020 SME Index results reveal an overall downward trend in business confidence. Most concerning is the nine-percentage point decrease (from 54 percent in Q3 to 45 percent in Q4) in confidence that the South African economy will be conducive to business growth in the next 12 months, comments Paper.

"This is followed by an eight-percentage point drop in confidence levels from the previous quarter that their business will grow in the next 12 months (from 72 percent in Q3 to 64 percent in Q4), and a seven-percentage point

drop in confidence that the private sector is doing enough to support South African SMEs (from 46 percent in Q3 to 39 percent in Q4)."

Cash flow

Quarter-on-quarter, cash flow remains the top challenge that SMEs face, outranking other prominent challenges such as the economic conditions, skills and regulatory environment.

Also of concern to Paper is the decrease in confidence that access to business finance will improve over the next 12 months (down seven percentage points from 47 percent in Q3 to 40 percent in Q4). This underscores the crucial role of financiers in supporting SMEs to weather the biggest economic storm of our times.

Paper said that before the pandemic hit, financing was geared towards providing growth capital for expansion, however, the industry had to shift focus and reinvent its approach to find new ways to provide relief finance.

While there are still funds available to businesses, such as the government's loan guarantee scheme, the country's financiers need to show more ingenuity in providing SMEs better access to these funds.

"The approach to relief capital is very different to that of growth capital." Enquiry no: 25

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Looking Forward **VEGA**

How farmers can reap rewards from renewables

DESPITE the outbreak of COVID-19 and the lockdowns in South Africa, the agricultural sector has been a star performer shipping about R150 billion worth of produce in 2020 or 3% more than in the previous year.

That's according to Agribiz, which predicts the sector is likely to increase agricultural exports further this year, on the back of another larger maize harvest. Additionally, favourable seasonal production conditions have boosted the prospects for exportable fruit commodities.

However, Paul Makube, Senior Agricultural Economist at FNB Agri-Business warned that the lack of certainty around constant power supply has had and continues to have a massive impact on the agricultural sector.

"Power outages have a negative impact on businesses with warehouses, processing plants, canning factories, cold storages and those reliant on irrigation. Farming operations and seasonal planning have been disrupted by repeated outages."

Makube said that while farmers can do everything in their power to produce good quality, marketable products and the ability to store products at the optimal temperature ultimately determines the quality when it reaches the market.

"Generators that run for hours to maintain temperature levels translate into an unsustainable additional cost. Farmers can register for the diesel refund scheme administered by the South African Revenue Service through

the VAT system. However, the administrative process and delayed refunds can be a challenge."

In addition to load-shedding issues, the cost of electricity supply via Eskom remains high and set to increase further from 1 April 2021. An amount of 5.44c/kWh will be added to the average standard tariff, bringing the rate Eskom customers will be forced to pay in the 2021/2022 tariff year to 134.3c/kWh — up by 15.63%.

Kyle Durham, Head of Alternative Energy Solutions at FNB Business said the current power supply challenges coupled with ongoing tariff increases present a compelling case for farmers to consider investing in renewable energy alternatives to ensure the sustainability of the sector.

"We've done the research and we find that this is definitely a non-core approach. For example, if a farmer is given a choice between financing another packhouse or a solar energy project, he will tend towards choosing the packhouse because he understands the risk profile but financially the solar plant might be a better option for his business," Durham said.

Durham said one of the most effective solar solutions is a grid-tied solution. Grid-tied systems consist of two key components — solar panels and a dedicated grid-tied inverter. All the electric power generated by the solar panels feeds through a mains-synchronised inverter directly into a distribution board and offsets the power the farm would normally consume from Eskom or the municipi-



pality. "This means you are trying to use your solar plant in such a way that by noon on a sunny day the plant is generating maximum electricity and as you go towards the evening and mornings, you revert to using municipality or Eskom electricity. You can save 30% to 50% on your electricity bill."

Durham said the expected capital cost of a solar plant was linked to the current energy requirements and can vary from R120 000 to more than R10 million.

"However, the long-term benefits in terms of cost-saving and business sustainability far outweigh the upfront costs. Enquiry no: 28

Lifeline for COVID-hit hospitality businesses

STRUGGLING black-owned restaurants, catering and accommodation establishments that have been hit hard by the devastating impact of COVID-19, now have an opportunity to get back on the road to recovery with the Sekela Hospitality Support Programme.

In an effort to bring some relief

and lift the spirits of business owners within the hospitality industry, well-known professional food service brands Marvello and Meadowland owned by Sigalo Foods have partnered with RCL Foods, Your Food Partners and Bidfood to launch the programme.

Valued at a R2-million investment per year, the Sekela Hospitality pro-

gramme is a holistic, phased programme that provides current black-owned hospitality businesses with back of house training, business coaching, access to capital and business stimulus packages.

"The industry has endured blow after blow during the COVID-19 pandemic with the international travel ban, curfew, recurring alcohol bans, maximum capacity and social distancing restrictions all coming into play," said Edwin Ukama, Channel Marketing Executive at RCL Foods, Your Food Partners.

"Like most countries, South Africa can't afford for its hospitality industry to fail. We wanted to do our part

and bring a solution to the fore where we can help drive a positive change and see business owners and entrepreneurs achieve their true potential."

The first phase will allow up to 50 successful applicants to join the programme and receive a 10% purchase discount on any food order placed through Bidfood.

In phase two, qualifying beneficiaries will receive relevant top-class back of house training and business coaching, followed by essential financial assistance / support planning and business profiling.

Perpetua Ngulube, Brand Manager of Marvello and Meadowland, said,

"We look forward to hearing from motivated applicants who are eager to turn their establishments into professionally-run and financially viable businesses."

"With this programme we aim to bring much-needed life, passion and positivity back into the hospitality industry and help shape dynamic business leaders."

To qualify, applying businesses must meet a particular set of criteria. The programme recruitment drive started on 1 March and businesses have until the end of April 2021 to apply by visiting www.sekelahsp.co.za.

Enquiry no: 29

Don't let these common problems grind your gears

GEARS, like any mechanical element, are subject to wear and, if not addressed, even failure.

That's according to Callum Ford, National Marketing Manager at Lubrication Engineers (LE) South Africa, says that upon first inspection of a properly installed and lubricated set of gears, they will have a highly polished look. This is due to the combined action of rolling and sliding which smooths the working surfaces of the teeth.

Under continued operation, however, trouble may occur, which will show up as a breakdown of the tooth surface.

"The type of failure will often indicate the reason and proper remedy," said Ford. "While normal wear will see the loss of metal from both surfaces from unavoidable abrasion, this does not prevent the gear from

performing satisfactorily during its expected life."

On the other hand, initial pitting may occur when gears start working. It may continue only to the stage where local high spots have been reduced, so that there is sufficient contact area to carry the load without further surface damage.

Occasionally this type of pitting will "heal over", but when pitting continues and becomes progressively worse, the unpitted areas are insufficient to carry the load and rapid destruction may occur.

In some cases, load reduction will prevent further destruction. "The lubricant should not be expected to eliminate pitting, although in some cases very mild pitting may be improved by using a heavier oil," said Ford.

Abrasion is another common problem. It's characterised by many



fine scratches on a tooth surface.

"Abrasion is damage caused by gritty material introduced into the gear case. Wear takes place uniformly across the teeth. The wear may be rapid and destroy not only the surface but the shape of the tooth."

Ford said abrasion can be prevented by more frequent changing of the oil to remove foreign abrasives, or better protection of the gear case from contamination.

Galling (which might initially be referred to as scoring) removes metal from tooth surfaces, due to the failure of the oil film to carry the load. This is normally because operating conditions are abnormally severe or because the incorrect oil was used.

Metal-to-metal contact occurs, and tooth surfaces are worn or torn. Excessive wear results in very rough surfaces. Occasionally metal is even dragged over the tooth edges, creating a feathery appearance. "Because

of the metal wiping action, a ridge may develop at the pitch line of the driven gear and a groove at the pitch line of the driving gear," said Ford.

Spalling, on the other hand, is the abnormal loading of tooth surfaces. This overstresses the subsurface metal until large chips or flakes break away from the teeth. This condition starts at the base of the tooth. Small flat flakes of metal may be visible in the oil.

"Gear longevity and bearing life are always improved by the use of the correct lubricant containing the proper additives," said Ford. "But it's important to understand the root causes of the issues too, and what the limitations of your lubricant are. We suggest people speak to a specialist lubricant advisor to help diagnose gear failure issues and to recommend the best product for their specific application." Enquiry no: 30

Soft starters have a Zest for hard work



THE new WEG SSW900 soft-starters are the ideal choice for complete motor control and protection, according to Zest WEG.

"These units allow quick and simple access to application information and configuration settings in any installation throughout a wide range of industrial segments where a three-phase induction motor needs to be controlled," the company said in a statement.

"With its well-structured menu interface, the WEG SSW900 line gives users a new level of interactivity, including Bluetooth connectivity."

The devices provide event logs with dates and times, as well as a setup and programming assistance. The built-in bypass extends the lifespan of the units, optimising space and reducing heat dissipation inside electric panels.

This built-in bypass functionality also extends throughout the WEG soft starter product range, up to 1400 Amps.

"By allowing the smooth acceleration and deceleration of motors by controlling the voltage, soft-starters greatly reduce mechanical stresses on couplings and transmission devices during the start-up of a motor."

In pumping applications, the smart control prevents water hammer and pressure overshoots in hydraulic piping, the company said.

Available from Zest WEG and its network of branches and value-added resellers in current ranges from 10 A to 1,400 A — and for supply voltages from 220 V to 575 V AC — the WEG SSW900 soft-starters can operate at ambient temperatures of up to 55°C without current derating.

"They can substitute direct online starters or star-delta starters, bringing a range of benefits to the user's application. These include savings in electricity, as well as greater protection and increased durability of the electric motor."

Users also have access to diagnosis and fault history, and experience greater flexibility as the WEG SSW900 allows the installation of accessories in the application. Graphic monitoring and customisable main screens provide further convenience. The monitoring functionality is also extended by a USB connector available on all standard products. This provides free access to product software available on www.weg.net. Enquiry no: 31

Why cheap 'grey' printer consumables could end up costing you plenty

IN tough economic times, the grip on production costs tightens and manufacturers may be tempted to cut costs. However, opting for less expensive consumables for coders and thermal transfer printers won't save you money in the long run.

That's according to Brandon Pearce, Pyrotec PackMark's General Manager, who said tried-and-tested, specifically-designed consumables may cost a little more in the short term, but long-term savings should not be overlooked.

"The harmful effect of 'grey' consumables will cost companies more money down the line as expensive printer parts become damaged, specifically in the case of Markem-Imaje's Thermal Transfer Ribbon consumables. Generic consumables harm the lifespan of the printer and printheads, forcing customers to replace expensive parts at costs far outweighing the savings made by using cheaper alternatives," Pearce warned.

He added that there are distinct advantages to using the correct consumables, especially with bigger capital investment equipment such as large printers. He cited the ribbons for Markem-Imaje's Thermal Transfer Printers as an example.



"They have precise release layers and a back coating that matches the Markem-Imaje machine's printheads. A poor-quality back coating can cause premature printhead wear and damage, as well as machine malfunction from static build-up."

Pearce said Markem-Imaje consumables are extensively tested using ISO standards and are put through strict inspection criteria to ensure you receive the highest quality products. "Using cheaper alternatives negates the terms of the printer's warranty — when something goes wrong, and it often does, you are left with a hefty repair bill that could have been avoided." Enquiry no: 32

How tech can help solve SA's water infrastructure woes

BY JACQUES SQUIRE

IN the wake of National Water Week (15 to 22 March 2021), the spotlight is again placed on the country's water infrastructure, its numerous challenges, and feasible and sustainable solutions that can optimise the supply of this basic human right.

However, to understand the current water infrastructure status quo, it's important to take a closer look at its most pressing challenges. For one, aging infrastructure remains a major concern. As with many countries in the world, South Africa has to continuously maintain its water infrastructure which includes ongoing components and piping replacement.

Furthermore, leakage detection remains a very real challenge with a report from the CSIR in 2018 stating that as much of a third of the country's water supply is lost due to leakage and aging infrastructure. Also, SA continues to deal with a dire energy shortage which means water infrastructure must operate in an optimised and sustainable manner.

Financially strained local municipalities must also heavily invest in their water infrastructure to upgrade and maintain it, unfortunately, in some instances, very little or no maintenance



is done on plant and water networks.

Considering the above, what steps can be taken to alleviate some of the pressure posed by SA's aging water infrastructure? Technology has the potential to reduce operating costs while improving operational and energy efficiency, saving both water and energy.

That said, the use of technology must also be intentional and form part of a cohesive system of processes. For example, installing a new automation system is a good place to start but must, for example, be implemented in tandem with effective processes, designed to measure and improve operational value in real time.

Technology also has the ability to reduce both energy and water usage, while also recovering and reusing water when utilised in wastewater, consumer packaged goods (CPG) plants and mining operations.

As mentioned, a significant amount of water is lost due to leakage. However, this is not a problem unique to SA. The Anglian Water region in the East of the United Kingdom faced

serious drought conditions compounded by significant population growth. To mitigate future water supply challenges, the water sector in England and Wales decided to implement an integrated leakage and pressure management solution (ILPM).

The system, for example, now enables Anglian Water to monitor its network on a daily basis and identify new leaks as it happens. The ILPM for example offers centralised data collection which in turn improves visibility of the network performance, resulting in greater efficiency as less time is spent processing data.

Ultimately, Anglian Water now benefits from a system that allows for improved planning and repairs at greater speed and efficiency, thus improving water savings and outperforming the leakage targets.

Smart solutions

There are many smart solutions available that have the potential to establish a water infrastructure that benefits from asset protection, cost savings, performance benchmarking, energy savings and increased safety. Technologies that enable these include sensors, intelligent motor protection, variable fre-

quency drives, and advanced process controllers.

Assisting water stakeholders to manage their energy needs efficiently is a big step towards sustainability. Energy management, reducing consumption, and improved visibility of operations are therefore essential. Likewise, reducing water losses, ensuring water quality and optimising the use of hydraulic and treatment infrastructure are crucial. Here, solutions can be implemented to optimise the pumping, and reduce energy consumption.

Intelligent pumping, for example, can take operations to a whole new level by capturing and analysing large amounts of data. These applications often communicate across multiple systems within a utility and enable the convergence of operational and business systems, which empowers operations, maintenance and management to make more intelligent decisions.

With the right solutions in place, water infrastructure operators can save as much as 30 percent on energy consumption.

At a typical wastewater plant, power represents 35 percent of operational costs with 65 percent used in aeration processes. Experience shows that energy costs can be reduced by 3 to 5 percent if effective plant automation and control systems are implemented.

Also, effective application of instrumentation and control systems can help increase the capacity of a wastewater treatment plant by up to 15 percent.

Jacques Squire is Water and Wastewater Segment Lead, Southern Africa, International Operations, Schneider Electric

Robots are making heavy bag handling safer and more productive

IN the ever-expanding demands of industry, robotics has had to flex and adapt to suit new niches. One such niche is the recent trend towards bag-in-bag packaging where products supplied in large bags (typically 50kg) are now being packed into two-ton bulk bags instead of palletised onto wooden pallets.

That's according to Yaskawa Southern Africa's System Solutions Engineer, Riccardo Ferrari, who said they are working with long-standing partner Compact Robotics, a specialist in bag handling applications, to address this niche.

"Every industry has the three Ds (dirty, dull, and dangerous jobs) that no human wants to do, but these tasks still need to be completed. Thanks to the invention of robotics, though, there's now the option to automate these functions, freeing up your human workers to focus on more challenging work that requires cognitive reasoning," he said.

Compact Robotics Managing Director, Martin Bensch said employees who have to carry and

palletise the bags themselves endure physical strain due to the heavy weight of the objects and the constant repetition of the job.

"Naturally, they might tire at some point and drop the bag, possibly injuring themselves and/or causing unnecessary wastage of the product. With the global drive for businesses and industries to automate and work smarter (not harder), robotics presents the chance for both innovation and efficiency."

Bensch said that for companies that decide to automate, the biggest benefit is the boost in production. "Robots are incredibly reliable and efficient, as they provide consistent and accurate performance around the clock. You know exactly what they're capable of and what's possible for your production line to achieve."

He described how Compact Robotics and Yaskawa developed a unique solution for a problem that a local fertiliser company experienced.

"In the fertiliser industry, fertiliser gets packed into a two-ton bulk bag, not on pallets. To get

the fertiliser into the bulk bag, though, an employee was required to pick up a 50-kilogram bag, balance it on their head, then drop it into the bulk bag. For obvious reasons, this was a dangerous exercise and not a viable way to do it."

While a robot with a gripper was identified as the answer, there was another challenge: the gripper couldn't release properly due to the size of the bulk bag. A tailor-made solution had to be developed.

"Compact Robotics and Yaskawa designed and patented a new gripper that allows for a 50-kilogram bag to be deposited into the bulk bag. Since then, we've seen our innovation implemented across other businesses to address similar challenges."

Bensch said while there had been a massive uptake in bag-handling robots across various industries in South Africa, he believes the biggest perceived barrier to entry is the required skills to handle them.

"Much like with any other machine, you



need to learn how to use them. Once you do, though, it's just like riding a bicycle. Yaskawa and Compact Robotics do their part to address the skills gap by providing support and training for their clients."

Before rushing out and buying a robot, Bensch advised that it's important for the robotics experts to analyse your production environment to provide the necessary guidance and where automation can make a significant difference.

"It is important to understand how the business works and what the expectations are before any implementation."

Enquiry no: 33

Persistence helps SA company cement big Nigeria AFS deal

SKF Group Company, Lincoln Lubrication South Africa's Africa Export division recently received approval from a leading cement producer in Africa to supply, install and commission 51 Muster II Automated Fire Suppression (AFS) systems at its cement plant in Nigeria.

The systems will be installed on drill rigs, crawler excavators, dump trucks, wheel loaders and other mobile equipment. The scope of work also includes a twelve-month maintenance contract.

Lincoln Lubrication SA's Export Sales Manager, Joseph Kumwimba, who was instrumental in securing the order, said he has been working with the cement producer on this project since 2015 when he did his first presentation.

"An opportunity then arose to introduce the same system to the cement producer's Senegalese company and my proposal was accepted. This gave us a foot in the door to approach the Nigerian counterpart who happened to invite me to site for assistance with lubrication. I noticed that the customer did not have any kind of protection against fire on their large mobile fleet, resulting in costly machine damages and losses as a result of fires. In addition to unwanted downtime, the customer faced high repair and replacement bills."

Kumwimba decided to point out the importance of having a fire suppression solution on their mobile machines and the associated cost and time saving benefits. SKF

Nigeria and Lincoln Lubrication SA proposed the Muster II AFS system and recognising the unquestionable value add, the customer did not hesitate in placing an order to equip 51 mobile machines on the cement plant with the AFS system.

Kumwimba described the Muster II AFS system as "a one a kind and one of the best in the AFFF (aqueous film forming foam) fire system category". It boasts a host of features including a 24/7 integrity (sensing cylinder actuator) monitoring system and a data download capability (system diagnostic) which are fully monitored by an alarm panel.

The system has an independent power source and uses the latest transducers. Featuring a fast manual and automated actuation point in case of fire, Muster II is also designed to reduce false discharge and alarm. All components are manufactured from stainless steel.

Kumwimba said the system that will be installed on the plant equipment will make use of a LOP (loss of pressure) sensor; the system updates the alarm panel with information every second. Tubing is strategically positioned above the areas identified in the risk assessment.

When the pressurised tubing is exposed to fire, the rapid elevation in temperature causes the material to plasticise and rupture.

Enquiry no: 34



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Growing demand for dry-type transformers in oil, gas projects

SAFETY requirements in the oil and gas sector are being met by custom-designed dry-type transformers from specialist company Trafo Power Solutions.

That's according to Managing Director David Claassen, who said, the company was seeing growing success in the application of this transformer technology in this industry, where all equipment must be safe to use in hazardous areas.

"Being air-cooled, these transformers are a safe alternative to conventional transformers, which generally use oil as



their coolant medium."

Oil presents risks of explosion, fire and environmental damage while dry-type transformers, by contrast, can be installed indoors, in confined spaces and in proximity to operational areas where people are present.

"Through our strategic partnership with leading transformer manufacturer TMC Transformers in Italy, we can design, supply and install fit-for-purpose solutions for hazardous areas," said Claassen. "TMC's facilities include state-

of-the-art technology and capability and allow us to compete with the best quality and range available globally."

In one of Trafo Power Solution's largest projects to date, it is partnering with TMC Transformers to supply the Mozambique liquid natural gas (LNG) project in that country's northern Cabo Delgado province.

Eighteen dry-type transformers are already on site, inside modular substations for the project's first construction camp of about 9,500 contractors.

Also being supplied are 20 specialised dry-type transformers for the project's gas plant, delivering features that only a few players in the global transformer sector could deliver.

"These 400 kVA to 1600 kVA transformers will be housed in IP56 enclosures, equipping them for high levels of ingress protection," he said. *Enquiry no: 35*



Efflorescence is caused by soluble salts migrating through the concrete via capillary action

Solving concrete efflorescence, adding durability

PREVENTING efflorescence on concrete is often a concern for contractors, but according to

Chryso Southern Africa, its Alpha Color 600 not only solves this problem, it also adds a durable water repellent property to concrete.

"Giving a beading effect to concrete, the admixture enables mortars and concrete to resist water penetration, by capillarity or by pressure," the company said in a statement.

"It also improves the aesthetic characteristics of manufactured concrete products, considerably reducing the appearance of spots and rings due to efflorescence. This gives a homogeneous colour to the result, whether it is precast aesthetic concrete, light precast concrete or coloured concrete."

Efflorescence is an aesthetic problem that results in a white, chalky substance that is deposited on the surfaces of concrete. It is caused by soluble salts migrating through the concrete via capillary action.

This high-performance efflorescence reducer is available in a range of packaging, including 25 litre jerry cans, 200 litre drums, 1,000 litre flow bins or bulk tanker loads. With a long shelf life of 12 months, it can be homogenised by some light agitation after extended periods of storage. According to the company, it can even endure freezing, requiring only agitation after thawing to recover its properties.

"From a health and safety point of view, Chryso Alpha Color 600 need not raise any concerns for contractors and their employees as it is classified as harmless." *Enquiry no: 38*

High-vis, colour coded fibre cable labelling

LEADING open-access fibre optic company Dark Fibre Africa (DFA) needed to differentiate between the fibre infrastructure of three of their major service offerings by using colour codes.

Problems they experienced with a previous provider included print fading over time, poor adhesion and the additional maintenance required to re-apply labels.

Because of this, the company contacted Brady to present a solution in keeping with the established network infrastructure colour coding.

"Well-identified network infrastructure is of great importance in Dark Fibre Africa's network. Thanks to smart, standardised colour coding on reliable labels, service provisioning and network maintenance becomes faster, and customer downtime risks are reduced with easy identification," Brady said in a statement.

The portable BMP51 Label Maker system from Brady was identified as the best fit for the client's requirements. But while black print on white or yellow are available as standard labels for the device, the white on red label was not a standard Brady product.

The solution was legible white on red labels that can be printed on-site. "Brady fast tracked the request and within a few months developed a reliable cable label in red that could receive a white print with optimal legibility on a curved surface."

The company said that before presenting a sample to the customer, R&D specialists tested the label extensively in its in-house facilities. "The new label construction and

selected adhesive stayed attached to cables, equipment cabinets and distribution boards.

Labels remained legible in heavily air-cooled environments indoors as well as in UV exposure outdoors."

On top of this, the label material was successfully adapted to fit a BMP51 Label Maker cartridge. Because of this, Dark Fibre Africa would be able to print the new label anywhere in their network infrastructure with the portable printers already in use.

"After successful sample testing in Dark Fibre's network infrastructure, Brady agreed to also offer stock availability for the new white on red label. A large stock of the complete colour code is always immediately available, as well as logistical and technical support." *Enquiry no: 36*



Big telematics upgrade for logistics giant

GLOBAL fleet management software provider MiX Telematics has announced an agreement to be the preferred telematics provider for African focused logistics heavyweight Imperial.

According to MiX Telematics, this strategic business partnership allows for the alignment of data and reporting across Imperial, which has been a customer for more than 10 years.

The new agreement means that MiX's premium solution will be implemented across Imperial's entire fleet.

"The telemetry data provided is integrated seamlessly into Imperial's management systems, providing an overall view of operations, allowing for rich data analysis and the iden-



tification of trends for continuous efficiency improvements," the company said in a statement.

In addition, the MiX Track and React bureau service will be utilised to ensure safe vehicle

and driver operations. The fleet's safety and monitoring are further enhanced with the MiX Vision camera solution and MiX Vision bureau service, the benefits of which are greater visibility and insights into Imperial's vehicles and drivers in real-time.

"Our expertise in fleet telematics and security services adds value to Imperial's business and is testament to how successful our solutions are at meeting the specific requirements of a leading logistics provider. Together, our advanced artificial intelligence powered technology solutions present new growth opportunities for both businesses," said Gert Pretorius, Managing Director at MiX Telematics Africa. *Enquiry no: 37*

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Digital tech redefining the post lockdown workplace

WITH the easing of lockdown, flexible workspace demand is beginning to return to 2019 levels and much of their growing market is amongst the many companies that are looking to find more mobile ways of working, offering employees the option to work from home, at the office, or from satellite coworking hubs that bridge the two.

That's according to Joanne Bushell, Managing Director of IWG Plc South Africa, the largest flexible workspace provider globally, who said the pandemic was driving irreversible changes to the definitions of entrenched concepts like "a job" and "a workplace".

"For many people, having a job will no longer mean being paid to spend a certain number of hours each month at a place of work... and their workplace will no longer be a single building with an allocated desk space."

Bushell said it is not just technology that is facilitating this metamorphosis, but people's attitudes and mind-sets have created the demand to work flexibly and promote agility. More businesses are becoming open to valuing employees on performance and productivity rather than actual in-office face-time, meaning a mobile workforce is evolving quicker than ever.

"Indeed, flexibility is one of the single biggest requirements of the modern workforce. Remote working has many advantages... from achieving a better work-life balance to less commute stress.

"Of particular relevance in the South African context, it also gives companies the opportunity to embrace diversity and inclusion by hiring people from different socioeconomic, geographic, and cultural backgrounds and with different perspectives. Equally, it broadens job opportunities for people in rural communities, or small towns, since they need not be limited by geographic location." *Enquiry no: 39*

A new benchmark in control automation excellence?

MOVI-C from SEW-Eurodrive offers controller control technology throughout the entire automation process from planning and commissioning through to operations and diagnostics.

Dylan Enslin, Maxolution Engineer at SEW-Eurodrive South Africa said the technology offers customers an advanced modular automation system, which provides the highest levels in machine and system automation excellence through decentralised drive and control technologies. "It reduces costs while improving usability with less complexity."

The Generation C range differs in respect to its generation B predecessor, with the main change being uniformity of look and feel and decentralised technology.

"MOVI-C is a new and improved version of the current generation technology. It offers similar parameters but gives a significantly improved user interface and experience. Better efficiency, improved controls, simplified installation and programming all offer the customer significant control improvements."

Enslin added that software in the Generation C range had been optimised with improved electronics at a component level. "With everything now modular and decentralised, we can offer our customers greater flexibility in applications and a far more efficient and effective solution."

"We are dedicated to the supply of Industry 4.0 advanced technology which offers great improvements in terms of software, overload capacities and communication protocols such as Ethercat CiA402. MOVI-CO represents just that."

MOVI-C comprises four modules: MOVISUITE engineering software, MOVIC-C Controller Control technology, MOVIDRIVE inverter and safety technology and MOVIGEAR and MOVIMOT decentralised drive technology, which can be utilised in various configurations.

Enslin said that interchangeable electronics between MOVIMOT and MOVIGEAR reduce spare part requirements held at plant and that MOVIMOT Flexible is able to run closed loop synchronous servo motors, which is useful for dynamic applications which require positioning and de centralised inverters.

New Features

He described SEW-Eurodrive's one cable technology as a highlight of the MOVI-C control automation solution as it offers a single cable technology with a digital encoder for synchronous and asynchronous motors. One hybrid cable is installed for the data connection between the frequency inverter



and electric motor, simplifying the process further with a uniform plug connector.

With electronic nameplate information, and fully integrated digital motor encoders in various designs, the one hybrid cable is of an exceptionally robust and high-performance design with coaxial data cable, making it suitable for cables of up to 200 m.

A further new feature is the new digital MOVILINK DDI data interface, which sends performance, brake and diagnostic data from the motor, and both safe and non-safe encoder data.

The company says MOVIGEAR lowers costs through its space saving, decentralised drive and automation system that SEW-Eurodrive offers as an all-in-one unit. The built-in Profinet communications protocol reduces the need for extra topology and extra wiring through its compact design. The new MOVIGEAR is also energy efficient and come with an IE5 rating.

Additionally, all gear units, motors, electric components as well as built-in encoders and diagnostic units are housed in the all-in-one unit giving the ability to quickly and easily start up machinery in engineering plants.

"Cutting costs and saving energy are important considerations when operating plant and machinery. Decentralised installation concepts are based on modularising and standardising components and functions whilst integrating intelligent control solutions directly in the drive technology and/or on the machine or plant module. MOVI-C is the way forward, it is the solution that SEW-Eurodrive believes is the new benchmark," said Enslin.

The MOVI-C solution is due to be launched in the next two years, but various automotive manufactures have expressed interest in this technology to be incorporated into their local plants, having seen benefits such as shorter installation /commissioning timeframes and simplified turnkey solutions in the event of plant breakdown via their parent companies in Germany whom SEW-Eurodrive service.

Enquiry no: 40

Distributor boosts sales with 'toolkit' initiative

IN an effort to promote SKF's MaPro and Power Transmission sales within their branch network as well as various markets, SKF South Africa's authorised distributor, Bolt & Engineering Distributors (Group) (B.E.D.) in Rustenburg have grouped a series of SKF tools into what they believe is a useful and practical 'toolkit'.

B.E.D. called on SKF's expertise in putting the MaPro/Power Transmission toolkits together. Working in collaboration with SKF's respective MaPro and Power Transmission Product Managers, Eddie Martens and Frans Odendaal, they assembled a kit made up of a TKBA 10 belt alignment tool, a PUBSDC1007

Tensioner Tester and a PHGT/C1 006 Pulley Gauge.

According to Martens and Odendaal, the toolkit has been a great success, serving as a drawcard for customers in the Rustenburg area.

"B.E.D. is now able to effectively showcase these products to their customer databases," Martens said.

"In addition to strengthening the relationship between the two companies, B.E.D.'s resourcefulness has unquestionably led to an increased awareness of our MaPro and Power Transmission product portfolios amongst end-users," Odendaal added.

Enquiry no: 41



3D machine vision for automated logistics operations

SICK Automation and Neadvance, a company specialising in computer vision technologies and artificial intelligence solutions, collaborated to engineer what they describe as the ideal automation solution for a motor manufacturer in the Czech Republic.

The manufacturer needed to implement an automated step in its receiving department to facilitate robotic picking of palletised items and their subsequent transfer to conveyors. The central element of the solution is the use of articulated robots combined with the SICK Visionary-T 3D camera.

The manufacturer's depalletising robot had to be automated to the point where it could independently and consistently recognise the position of individual parcels and packaging units on a delivered pallet and reliably grip them for transfer.

The Visionary-T CX with 3D snapshot technology was selected. Its streaming camera is able to supply the

robot controller with three-dimensional images in the form of 3D point clouds.

The device uses 3D time-of-flight technology to generate the 3D images. This technology, based on light being emitted from a built-in light source, measures tiny time differences in the reflection from an object's surface back to the camera.

The time differences help calculate the distance to the reflective surface and, using special Neadvance-developed algorithms, convert them into a three dimensional representation. The camera's high frame rate allows this process to be done up to 50 times a second.

Another advantage of this technology is the powerful active lighting system integrated into the camera. It illuminates the surroundings enabling the camera to detect objects with very low

reflection properties and operate in complete darkness.

Within the manufacturer's goods receiving system, the Visionary-T CX is attached to the articulated joint of the robot, continuously moving with it and acting as an alert 'eye'. This enables the streaming camera to deliver information about the robot's dynamic accelerations, reversing movements, and vibrations.

The 3D snapshot vision technology was particularly important for Neadvance in this application as every single depth and intensity pixel of an image is captured simultaneously.

In its daily operations the Visionary-T CX delivers the 3D point clouds and, using the Neadvance algorithms based on 3D shape analysis, determines the exact position of crates and cardboard boxes.

Enquiry no: 42



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If toughness is a Criterion, check out these forklifts

RECENTLY launched TCM T5C internal combustion forklift trucks are now available throughout Southern Africa from Criterion Equipment.

According to Brenton Kemp, Managing Director of Criterion Equipment, these robust new TCM 2,5 T and 3 T forklift trucks are designed to meet demand for reliable machines that deliver high productivity, secure lifting and extended service life.

Added to this, T5C models - supplied with solid tyres as standard - have improved features for easy manoeuvrability, operator comfort, safety on site and low maintenance

requirements.

"Watching this machine at work is impressive. The low centre of gravity provides balance and stability, while high torque delivers steady lift speeds, even when carrying heavy loads," said Kemp.

"The fully hydraulic power steering system enables the operator to navigate freely and to turn easily in confined spaces and an integrated digital display monitor relays critical information clearly to the operator."

He said this series has many features that improve safety during operation, including multi-directional visibility for clear front and rear fields of vision and a reinforced over-

head safety guard which protects the operator and provides shelter when working outdoors, without obstructing visibility.

"What's also important is the mast interlock system that locks mast movement whenever the key switch is off. The neutral safety start feature only allows the machine to be started when the control lever is in neutral - the forklift cannot start when it is in gear."

These machines are powered by a 44 kW diesel engine, but also available with versatile GK25 dual fuel engines that run on gasoline or liquid petroleum gas (LPG).

"An efficient powertrain maximises

the truck's power, while curtailing vibrations. This reduces wear of critical components and ensures comfort for the operator."

The cooling system is designed to regulate airflow and prevent the engine from overheating, especially during operation in high humidity conditions and under extreme temperatures.

A powerful fan, which cools the engine and radiator to maintain high performance, forms part of efficient engine management designed to reduce stress to key components and sustains truck performance and



reliability.

"The easily accessible engine bay is large and neatly organised, with sufficient space for quick and effortless routine repairs and servicing."

Criterion Equipment, part of the Capital Equipment Group of Invicta Holdings Limited, is the sole distributor of TCM forklift trucks in South Africa and offers a technical advisory, spare parts, repair and maintenance service. Enquiry no: 43



Are robots about to revolutionise storage tank inspections?

Electrocomponents has developed the Quality Functional Deployment (QFD) model via RS Monition, the company's maintenance engineering specialist service, and its DesignSpark engineering platform and community continues to create vital opportunities for intellectual property development and commercialisation of the technology.

Oil and fuel storage require a robust and reliable infrastructure, with regular inspection critical to ensure that tanks are fit for purpose. Existing inspection methods often result in storage tanks being taken out of service to be drained and inspected for corrosion, which is hazardous, time-consuming and costly work.

The nautilus solution addresses

these issues head-on, in the form of a small robot which can monitor and plot its own position whilst carrying out corrosion inspection. The robot uses active real-time remote controls to move around a tank, and an ultrasound probe to take measurements of floor thinning. It then records data regarding location for post-processing after the robot is retrieved.

The design aims to obtain the smallest possible footprint to allow entry via the smallest manholes of liquid storage tanks. For the robot to perform an inspection in an explosive and flammable environment, the robot operation must avoid sparking, which can create an explosion in the tank due to heat and the presence of vapour.

Michael Burrows, Senior Innovation

Advisor at Electrocomponents said the technology can also be applied to the inspection of ship-borne fuel tanks, transportation tanks and water storage tanks.

"As well as our responsibilities around IP and commercialisation for nautilus, we carried out a very extensive piece of work, called a Quality Functional Deployment (QFD) model ahead of the project, where we went out to over 100 current users and tank farm operators to uncover their list of requirements," Burrows said.

"We needed to know what the must-haves were and the nice-to-haves. This helped to shape the ergonomics, the ease of use, the size, the deployment, and the ability to deploy with limited people."

He said they had received significant interest already. "There are 600 tank farm operators globally and we've already got an active response from around 70 of them with a number of offers to utilise the technology in their tanks."

"Within the oil and gas industry there is an overarching goal to make it unmanned by 2030. Part of the commercialisation that we have been involved with has been to generate interest in not only the overall nautilus robot, but also the technologies within it. Of course, we have the robot in its entirety, but there are also opportunities to license the individual pieces of technology for existing solutions or other applications."

Enquiry no: 44

Next-gen sprayer takes crop protection to new heights

I wonder what my father and grandfather would have said if they had seen it," says Johan Landman of Volksrust. He's referring to the new MF 9330 self-propelled sprayer which has just arrived to boost the ranks of the Massey Ferguson team serving the JaJoLa Boerdery in their crop protection efforts.

Johan still remembers the same operation in his childhood - teams of labourers, every man and woman with a bottle of poison mix to dose every mealie ear to kill the caterpillars. But that is not all that he remembers.

"I was born in that generation. I still remember very well, when I was four to five years old, that my father and his men started yoking the teams of oxen to hook up with the ploughs waiting in the lands. There was a red team, a black team, and a motley team. They started ploughing by five in the morning with a break at about ten o'clock. The oxen were then outspanned near water and allowed to graze before the afternoon shift."

Johan also remembers the first time the "Vaaljapie" - the TE20 Ferguson tractor - arrived on the farm to take over the two-share plough from the oxen. This speeded up the ploughing process and the work could continue non-stop for the whole day.

"The tractor was paraffin-driven but had to be started on petrol. Once the engine had warmed up, the fuel tap would be switched over to power paraffin, commonly known as 'Voco'. After the Vaaljapie came the 35 and then the 135; followed later by the 65 Ferguson with its long nose, and even later the 188's. That is how we became MF people and today we are still loyal to the brand; we are Massey Ferguson people!"

Johan's son, Japie, is the sixth generation Landman to farm the Landman lands. Similar to the string of Massey Fergusons, a string of Landmans was born to continue the legacy. Today Japie is responsible for crop farming and his father, Johan's focus is on animal husbandry.

"I'm fond of the new technology," says Johan, "but Japie is the younger generation who understands it better."

Japie says their previous sprayer did not have the capacity to deal with the work in the available time window. He saw the MF 9330 in the act in Brazil and back home consulted his local MF dealer, Werner Nel of JWJ.

JWJ is one of the dealers country-wide that distribute the range of agricultural mechanisation solutions from top manufacturer, AGCO. Brands in the AGCO corral are Massey Ferguson, Valtra, Fendt and Challenger.

AGCO recently decided to play a bigger role in the direct importation and distribution of these brands in Africa to establish a shorter, direct route to the farmer.

Lenard Langenfelder, regional representative of AGCO in the Eastern Region, says farmers will still be able to obtain all the products and services from their well-known local dealers, but AGCO now supports these dealers directly with the procurement of products, technical know-how and marketing.

The office section in the giant



AGCO warehouse in Kempton Park was enlarged recently to accommodate an expanded team. Werner, with the assistance of AGCO, recently availed a test unit to Japie, which he used on the farm for approximately 250 hours before he took ownership of his own MF 9330 high-rise sprayer.

The sprayer had to be deployed immediately because the mealies were growing at an astounding pace after a copious amount of rain in the area. An official handover ceremony was arranged for 15 December and ProAgri was present to view the new technology.

Long legs

The sprayer really has long legs. For Japie, ground clearance is an important factor. It means he can also spray late in the season when the maize is at its highest. The sprayer has a ground clearance of 1,65 m, and the beam can be raised to a height of 2,1 m, or lowered to a mere 0,7 m. This enables effective pre-emergence spraying of newly planted mealies. The beam is 30 m long, but stability over uneven terrain presents no problems. Enquiry no: 45

New disc hubs promise reliability in extreme conditions

FOR bearings deployed in the agriculture sector there is no shortage of potential hazards, including moisture, soil dust, corrosive fertilisers and very high shock loads - such as those generated by stone chipping.

That's according to NSK, which says the robust bearing design and highly effective sealing of its Agri Disc Hubs makes them a proven choice in extreme operating conditions.

"Manufactured in Germany, these innovative units are a popular choice for common farming implements such as short disc harrows, seed drills and flail mowers," the company said in a statement.

"Extremely harsh working conditions, along with high-pressure washing routines, place a raft of demands on the bearings and seals found in equipment for the agriculture industry. A low-quality bearing will not be sufficiently robust in its design or performance levels to provide the uptime necessary for reliable and productive operation. Instead, frequent downtime and costly failures will be the likely result."

NSK said its Agri Disc Hub, by contrast, is a cost-effective, self-lubricating bearing unit that delivers several major benefits to users of farming implements.

They feature double-row angular-contact ball bearings that can support high axial and radial loads, while the meticulously devised configuration locates the bearings within a sturdy housing that connects directly and simply to the implement via an integrated flange.



"Alongside high-performance bearing technology, Agri Disc hubs are equipped with a highly effective sealing system for robust protection against extreme condition applications. This comprehensive system is a combination of labyrinth and contact seal designs, which serves to prevent both the ingress of contaminants and the escape of grease."

The company said the design of the bearings and sealing system significantly increases service life.

"Even under extreme stress, Agri Disc Hub bearings - and thus the implement which they serve - grant a service life that is several times beyond that of other commercially available solutions, while their modularity means they can be adapted very quickly to individual user requirements."

"In such instances, flexible manufacturing at the Munderkingen plant ensures rapid deliveries at competitive costs, even more so for custom requests."

Enquiry no: 46

Lube-free chain promises reduced maintenance costs in food and beverage sector

BMG's extensive range of Tsubaki chain products encompasses the Lambda lubrication-free roller chain series, which has been designed for industries where clean working environments are required and where product contamination cannot be tolerated.

That's according to Carlo Beukes, Business Unit Manager, Power Transmission division, BMG, who said typical applications for this chain are in packaging machines used in food processing, pharmaceuticals and electronics manufacturing, as well as in environments where abrasive contamination is prominent, like wood processing and the paper and packaging sectors.

"Tsubaki's environmentally-friendly Lambda lube-free chain series has been designed with a sintered oil-impregnated bush, where the chain is internally lubricated to avoid premature wear.

This feature extends the operating life of the chain, without the need for additional maintenance or messy external lubrication," said Beukes, adding that because the chain requires no lubrication, working conditions are cleaner and safer.

"Difficulties encountered with conventional chain for case packaging and secondary packaging equipment include contamination of cardboard surfaces and products, caused by lubricants and paper dust.

This gives rise to high maintenance costs and costly production halts for the necessary cleaning cycles of equipment.

Added to this, uneven wear and elongation cause problems with chain alignment, resulting in unsynchronised product transport."

He said the chain is supplied with a specially developed food grade lubricant as standard and this increases chain wear life by 30%, with no compromise on chain strength. "Because there is no need for external lubrication, the chain is kept cleaner, making it easier to specify and install, especially in areas with strict hygiene regulations.

"The microscopic pores in the seamless sintered bush of Lambda chain are vacuum filled with a high-performance NSF-H1 food-grade lubricant. While most of the lubricant is held in place, where it is needed most, a small amount will inevitably migrate to the surface of the chain.



For this reason, it is critical that the lubricant is deemed suitable for use in the food industry."

Beukes said the chain meets all NSF-H1 requirements and can be safely used in environments where there is the possibility of incidental contact with food. H2 lubricants are suitable for locations where there is no possibility of contact with food and H3 lubricants, which are typically edible oils, are used where there

is likely to be contact with foodstuffs. Many industries, including food and beverage production, use processes involving heating and cooling.

According to Beukes, Lambda chain, which has been shot-peened for higher fatigue strength, operates efficiently and safely in a wide ambient temperature range between -10°C and +150°C. BMG supplies a special heat resistant series which is suitable for use in environments with elevated temperatures up to +230°C.

The surfaces of the outer and inner link plates are Fe403 blackened for improved corrosion resistance and there is smooth engagement with the sprocket and reduced wear on the sprocket teeth because of the durable roller.

There is also a lower risk of chain breakage because the specially selected steel alloy has undergone effective heat treatment.

Apart from the advantage of the extended service life of this chain - which is achieved as a result of advanced sintering bushing and an improved bushing-lubricant combi-

nation - other features of this series include easy cutting, a patented ring coining process, high productivity, easy interchangeability of chains and sprockets and reduced maintenance requirements.

The patented ring coin connecting link ensures the chain can be specified to its full chain capacity. This process increases the strength of the link plate around the pinholes to ensure the link retains the same high strength and wear resistance as the rest of the chain.

The disassemble rivet pin design makes for easy fitting and removal of the chain and a special coating on the pin surface enhances long term internal lubrication. The elongation pattern of Tsubaki's Lambda chain is extremely stable, which reduces the need for intermediate chain and sprocket adjustment and also contributes to increased service life.

The standard Lambda series includes BS/DIN and ANSI drive and conveyor chain with attachments, double and hollow pitch conveyor chain, as well as double plus and accumulator chain with centre rollers.

Enquiry no: 47

Generators deliver purer nitrogen while slashing expenditure

NITROGEN is an essential requirement in a number of applications such as chemical manufacturing, food and beverage processing and packaging, electronics, pharmaceuticals, and laser cutting, which are dependent on this industrial gas as an integral part of the production processes.

According to Zandra van der Westhuizen, Business Line Manager of Atlas Copco Compressor Technique's Industrial Air division, the company's advanced NGP+ Nitrogen Generators have been designed to supply nitrogen onsite at up to 99,999% purity and deliver a potential 50% reduction in running costs.

"Onsite industrial gas (nitrogen and oxygen) generation offers a much more sustainable and cost-efficient solution compared to cylinder or bulk liquid supply which require transport, handling, storage and administration," she said, adding that the company has extended its NGP+ nitrogen generator range to include nine energy-efficient, high-capacity models.

Van der Westhuizen said these generators have been designed from the outset to protect the process application and the users'

equipment investment, offering onsite nitrogen at flows ranging from 5,4 l/s (18 Nm³/h) to 867 l/s (2870 Nm³/h).

Operating with PSA (Pressure Swing Adsorption) technology, these plug-and-play NGP+ Nitrogen Generators can simply be plugged into existing clean, dry compressed air installation to offer an independent, reliable, secure, flexible and cost-effective supply of nitrogen.

The company claims that the augmented family of NGP+ nitrogen generators offer up to 50% reduction in running costs compared to other nitrogen supply methods.

Core to the NGP+ is the Carbon Molecular Sieve; small oxygen molecules penetrate the pores while large nitrogen molecules by-pass the carbon molecular sieve. The NGP+ generators are equipped with an automatic "off-spec" purity control check that prevents nitrogen with a purity level less than the fixed threshold from reaching a sensitive application.

Additionally, fail-safe sensors continuously monitor feed air conditions such as temperature, pressure and pressure dew-point. "If the feed air does not match the generators specifica-

tions, it is automatically blown off prior to entering the machine to eradicate the risk of contamination and component damage," Van der Westhuizen said.

"In addition, in some sectors like rubber, metal production and general industry, customers are able to refine the actual purity level required for any given application while benefitting from optimum economic operation."

The future-proof design of the NGP+



generators, which includes the integration of SMARTLINK, aligns these units with Industry 4.0 applications. This data monitoring program, collects, compares and analyses data in real-time to deliver an intelligent assessment of generator system performance. Through machine monitoring and assessment customers are able to achieve increased reliability,

reduced downtime and identify energy optimisation opportunities.

The NGP+ generators complement Atlas Copco's existing range of onsite gas solutions, including both nitrogen and oxygen generators, available in membrane and PSA technologies.

Enquiry no: 48

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EASTERN CAPE INDUSTRIAL & BUSINESS NEWS

R500k grant the cherry on top for localisation efforts

ISUZU Motors South Africa (ISMAf) recently issued an Enterprise Development grant of close to half a million Rand for the localisation of an extended reach aerial platform - also known as a cherry picker - in South Africa.

The SLT 180 telescopic aerial platform will be developed and manufactured locally by Isuzu business partner Smith Capital Equipment (SCE) to reach heights of 16 to 18 metres, which previously could only be achieved with imported platforms. Currently SCE locally designs and manufactures the following ranges of aerial platforms: telescopic (T100, T120, T140) and articulated (9SS, SL125, 12SS, 15SS, 21SS).

SCE, which is head-quartered in Gauteng, is an 84% majority black-owned and 56% majority black woman-owned company specialising in aerial platforms, drilling rigs

and importation and installation of FASSI cranes.

Set to meet the highest international design standards, the first engineering prototype of the SLT 180 manufactured in South Africa is expected to be completed by the end of 2021, said Fortunate Mdanda, Chief Executive Officer of SCE.

"Safety is of paramount importance when designing such a structure therefore caution needs to be observed. With the growing preference for telescopic aerial units over articulating units, the SLT 180 will be the first locally manufactured telescopic unit able to reach heights beyond 16 metres, therefore it presents great market opportunities," said Mdanda.

She added that the new venture which is supported by Isuzu with an investment of R485 000, will allow SCE to upskill the development

capabilities of the company and its labour force.

"The development of this new product will help with job retention as it poses new market possibilities likely to expand the company product range and consequently cultivate internal skills development," said Mdanda.

Dominic Rimmer, Senior Vice President of Technical Operations at Isuzu Motors South Africa, said this Enterprise Development grant aligns not only with Isuzu's transformation values, but also government's call for localisation and enterprise development partnerships in the automotive sector.

The SLT 180 will typically fit on an Isuzu truck, and is set to provide state-of-the-art truck body solutions for Isuzu customers in a range of industries.

SCE is no stranger to Isuzu, as

it is a subsidiary of Isipho Capital Holdings. In 2019 Isipho Capital Holdings made history with the purchase of Bates Shelly Beach, as the first Isuzu dealership to be 100% black-owned, in addition to being 65% woman-owned.

Isipho Capital Holdings is run by Mdanda, and her husband, Siphon. The power couple are at the forefront of South Africa's new wave of Black industrialists.

"Isuzu is committed to transformation and continues to drive a culture of inclusivity. If we do not empower our value chain, the economy cannot grow. We therefore ensure that we support supplier and dealer transformation initiatives, as well as the deepening



An extended reach aerial platform, which will reach heights of 16 to 18 metres, will be locally produced by Isuzu Enterprise Development Partner, Smith Capital Equipment (SCE)

of the local value chain through enterprise development initiatives such as this partnership with SCE," said Rimmer. Enquiry no: 49

Diesel generators in the data centre

BY DAVID MATUSESKI

FINDING the best combination of generator size and system architecture is a goal for all data centre designers. Many times, a larger generator can provide unique advantages. When you combine large

generators into a paralleling system, you can achieve a whole new level of advantages.

The data centre designer should carefully analyse all options to optimise the generator system design.

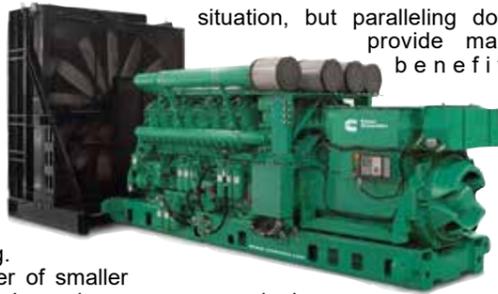
There are many factors to consider when designing the generator system for your data centre. Two of the most important items to consider in your design are the optimal size of the generator and the architecture of how your generators integrate into the overall power system. In

some installations you have no choice but to go with a larger generator due to the size constraints of the site.

This can be especially true when installing additional power generation into an existing building.

Using a greater number of smaller generators would not have been a good option in this example. The higher power density of large generators was the better choice. In addition to the unique challenges in metropolitan areas, sometimes the footprint advantages of using large generators are also desired in new construction.

Paralleling generators in a data centre design can have many advantages. It does not fit every



situation, but paralleling does provide many benefits

over a single generator design. The advantages have varying degrees of importance in a data centre application, but efficiency (reducing your stranded generator power capacity), can be the most attractive.

The generator system is one of the more expensive systems to procure, install and maintain. Making this system as efficient as possible will have a significant effect on reducing

data centre cost.

An important challenge in a paralleling system architecture is achieving concurrent maintainability. This is due to the common paralleling bus required in a generator paralleling system.

Various system architectures have been developed to address this challenge. One of the more common architectures is adding tie breakers (or sometimes tie switches) to the paralleling bus. These tie breakers provide segments in the bus that allow you to partially shut down the switchgear for maintenance.

For example, if you have an N+2 design, you can completely isolate one segment of switchgear for maintenance or repair. This design is also used in an N+1 design with tie breakers in-between each generator on the paralleling bus. The protective relaying on a segmented bus can be

designed to eliminate the paralleling bus as a single point of failure. This is most commonly achieved with a current differential scheme.

Another way to achieve concurrent maintainability is that each generator can be switched from one paralleling bus to an alternative paralleling bus. In an N+1 design, there would be one additional generator and corresponding transfer switch. Any one component, including the paralleling bus, can be shut down for maintenance and there will still be the full 'N' capacity available from the generator system.

There is another architecture for paralleling generators being used in data centres. This is sometimes called '3 to make 2' (or '4 to make 3', etc.)

David Matuseski is the Mission Critical Technical Leader for Cummins in the Strategic Accounts Group

Why traditional IT sourcing is falling short

TO remain relevant in today's business environment, IT sourcing leaders must take on new roles and acquire new competencies to enable and support innovation and digital transformation, according to a leading technology, sourcing and transformation specialist.

Bill Huber, who is the global leader for Information Services Group's (ISG's) Software Advisory practice in

the USA, will share his insights with South African IT and procurement professionals at the upcoming IT Sourcing Summit 2021.

Now in its second year, the summit, which is hosted by Smart Procurement World, aims to address the unique challenges facing today's IT and procurement professionals as they strive to meet their organisations' digital needs.

Huber contends that today, an



enterprise's speed and agility in acquiring digital capabilities will determine its success. "However, IT sourcing leaders are still using cost savings and cost avoidance, along with compliance and risk allocation, as their primary goals."

Though critical, these operational measures fail to address how effective IT sourcing contributes to organisational transformation, he said.

"In effect, there is a massive disconnect between traditional IT sourcing processes and the elements that

will contribute to a company's success in the 2020s. Where sourcing used to drive disruptive change, it is increasingly becoming the bureaucracy that most needs to change."

In his presentation at the IT Sourcing Summit 2021, which takes place on 3 June 2021, Huber will outline the priority objectives for IT sourcing strategy.

Commenting on the importance of this summit amid the challenges of the Covid-19 crisis, Debbie Tagg, Smart Procurement Chief Operations Officer, said: "There is no denying that the global pandemic has catapulted us into the 4th Industrial Revolution. Globally, the way that we do business has changed and the drive for digitalisation within organi-

sations has left many procurement and IT professionals scrambling to access the best hardware and software solutions to enable efficiency across their organisations. The scramble continues as it is clear that this new normal is here to stay."

The event's keynote speaker, Poooven Naidoo (pictured), said IT sourcing must involve inclusion and purpose, to understand how to provision ICT capabilities to support businesses.

"In the face of unprecedented market volatility and supply chain disruption, many CFOs are pushing IT category buyers to cut costs and manage risk. In this long game, empowering sourcing teams

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