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## WHY A TECHNOLOGY-AGNOSTIC ENERGY MIXTURE COULD BE SOUTH AFRICA'S ENERGY SOLUTION



As the world prioritises decarbonisation and a direct pathway to renewable resources for energy supply, South Africa stands at a critical juncture in its own energy journey, says Alberto Gambacorta, Vice President - Project Development for Sub-Saharan Africa at Scatec. "This country has historically been powered by coal, of which there are abundant natural deposits around areas like Emalahleni. Currently, approximately 85% - around 42GW of the nation's electricity is generated via coal-fired power stations. But this is not going to last forever, nor is it a sustainable model."

As the world gears up for the United Nations Climate Change Conference of the Parties (COP29) in Azerbaijan, there is a growing global consensus among nations and global alliances to decarbonise around the world, with renewables often touted as the best way forward.

"Globally, institutional funds are being pulled out of fossil fuels, and the coal-based power industry no longer enjoys the popular, unmovable backing that it once was accustomed to," says Gambacorta. "If companies want to do business on the global stage, they have to show their credentials and focus on carbon neutrality." This is the nature of a globally connected economy following the introduction of CBAM (Carbon Border Adjustment Mechanism), and previous signatories to the Paris Climate Agreement, one which aims to limit the emission of CO<sub>2</sub> and have an environmental focus.

According to the energy expert, "Mankind's current trend towards renewable energy has positioned

South Africa, with its vast solar and wind potential, to take advantage of the opportunities presented by the energy transition.

"Moreover, as a signatory to the Paris Agreement, South Africa has committed to reducing its greenhouse gas emissions and contributing to the global effort to combat climate change. The country's coal-heavy energy sector is a key focus area for achieving these goals."

South Africa's transition towards a more diversified energy mix has several drivers, namely: Reducing the carbon footprint of the energy sector; meeting growing energy demands; and ensuring a socio-economically just transition.

Led by President Cyril Ramaphosa, Kgosisentsho Ramagopa, the Electricity Minister, and Gwede Mantashe, Minister of Mineral Resources, South Africa's government must lead the fight towards a complex balancing act, reconciling the urgent need for energy security in the face of some of the world's worst loadshedding, with the need to secure long-term sustainability.

"We as a country are making strides towards our goal of a technology-neutral energy mix," says Gambacorta, adding, "While certain infrastructure upgrades are necessary, the nation's sophisticated power grid and robust transmission network provide a solid foundation for scaling up diverse generation sources. Moreover, the government's support for new independent power purchase agreements has opened attractive investment opportunities in the energy sector."

South Africa's private sector is expected

to drive significant growth in renewable energy, with potential investments of around R200 billion for private offtake projects and another R200 billion estimated for public programmes by 2030.

Projections indicate that the private procurement market could see a growth of 6GW for solar PV and 4GW for wind power by 2030, representing investments of R116 billion and R98 billion, respectively, particularly from large-scale industrial off-takers, especially in mining, and C&I sectors.

While further investments into new coal operations are planned, future scenarios forecast around a third of our power to come from solar and wind by 2030.

South Africa's renewable energy resources and robust infrastructure offer significant opportunities for green investment and growth. The transition towards a more sustainable energy mix must be managed carefully to ensure that it does not exacerbate existing social and economic inequalities, says the energy expert.

"In adopting a tech-agnostic, diversified approach to power generation, South Africa can effectively navigate this transition and emerge as a leader in sustainable energy development, as well as help ensure a steady supply that covers all variabilities," explains Gambacorta, concluding with, "The rapid growth of solar energy over the past year highlights South Africa's potential to embrace clean power on a large scale, as part of a broader energy mix that includes coal, solar, wind, hydrogen, nuclear, and other innovative solutions."

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## A rational design for fire-safety purposes is not just a tick-box exercise

As building regulations evolve and safety standards are updated, the importance of consulting an expert for a proper rational design in fire protection is increasingly vital, says Michael van Niekerk, Chief Executive Officer (CEO) of consultant agency ASP Fire, stressing the need for sound engineering principles in fire safety measures.

"The standard addresses fire protection requirements and provides deemed-to-satisfy guidelines for compliance with National Building Regulations," explains Van Niekerk. "This comprehensive guideline

document covers various aspects of fire safety, safety distances, occupancies, fire performance, structural components, escape routes, and many more."

Van Niekerk highlights that rational design goes beyond mere compliance with regulations. "It involves a thorough understanding of fire risks and behaviour, allowing for the development of customised fire protection strategies for companies. This approach ensures flexibility to meet safety requirements by considering alternative solutions, while affording the same level of protection."

Rational design is a performance-based approach that requires the expertise of registered engineers, explains the CEO. "From shopping centres to industrial structures like fuel depots and factories, a proper rational design cannot be achieved by simply following code requirements. It starts with a comprehensive risk

assessment."

Van Niekerk further highlights the necessity to continually conduct new fire safety assessments, especially during refurbishments or extensions of existing structures, or when solar panels are installed at an existing shopping centre, for example. "Fortunately, many companies recognise their lack of expertise in fire safety and opt to consult a professional like ASP Fire to ensure compliance with regulations," he says.

Involving experts from the planning stage ensures that the design and installation of fire safety systems align with regulations and industry best practices. A rational design cannot just be a tick-box exercise in terms of the regulations. It requires specific expertise to be carried out effectively and properly, says van Niekerk.



"As regulations continue to evolve and building designs become more complex, proactive risk assessments and customised fire safety strategies are essential to safeguard lives and property against fire hazards," he concludes.

Enquiries: [www.aspfire.co.za](http://www.aspfire.co.za)

## SA needs 'right-to-repair law' to cut e-waste and grow economy

It is a frustrating scenario most South African consumers are all too familiar with: You purchase an expensive new piece of electrical machinery or electronic device, and shortly after the warranty expires, a part breaks. But when you take it back to the manufacturer, they shrug and state that they are unable to replace the part, and that you should buy the newer updated version of the product.

"This keeps happening, and customers have every right to be furious," explains Patricia Schröder, spokesperson for the producer responsibility organisation Circular Energy. "We want to encourage the government to follow in the footsteps of many other countries and start putting 'right-to-repair' legislation in place in South Africa."

A right-to-repair law would require manufacturers to ensure 'parts pairing' – the ability to replace parts of different devices. The European Union has already adopted such a law, and their consumers now have the right to repair common household appliances, including smartphones, even after the warranty period ends.

"In South Africa, where regulations regarding the reparability of electronic devices are virtually non-existent, urgent action is needed," says Schröder. "As a result, consumers are left with limited options when their devices inevitably malfunction. This leads to a cycle of premature disposal and huge amounts of unnecessary waste."

### Built to break: The dangers of planned obsolescence

"Consumers may be scratching their heads, wondering why it feels as if their electrical and electronic devices seem to be breaking more frequently and faster," says the spokesperson. "This is no figment of our imaginations but rather a design strategy by manufacturers called 'planned obsolescence'."

You may, for instance, find yourself with a very expensive washing machine, of which a small electronic part – like a chip or printed circuit board – breaks a few months after the warranty has expired.

The manufacturers then claim they cannot replace the part, resulting in the entire machine ending up as waste, partly or wholly in a landfill, with you as a consumer being burdened to buy a new product. Schröder adds, "Planned obsolescence is emblematic of the mass consumerism culture, and it is simply not sustainable. The world is moving towards a circular economy, and local 'right-to-repair' legislation would make a massive difference in reducing South Africa's e-waste problem."

### The victims: The environment and our pockets

According to Schröder, Circular Energy wants to encourage the government to adopt 'right-to-repair' legislation not only because it would benefit the environment, but also because the current status quo affects the poor the most.

"A massive part of our population simply cannot afford to keep replacing electronic devices that are constantly breaking. They need devices like smartphones to be able to find work and to do their jobs. But if they have to regularly fork out large amounts to simply replace these devices, it cuts them out of the economy and opportunities," she explains.

Schröder adds that in an open economy, people should have the right to look for different replacement options when their devices fail. "Currently, South Africans have no choice but to 'pay and throw away'. We need to stand together to get the right to repair signed into law. It would be an economic and environmental game-changer," she concludes.

Enquiries: [www.circular-energy.org](http://www.circular-energy.org)



## Advanced MRO gives a leading edge with help from RS Group

Local product distributor RS South Africa has been in business for more than 80 years and it knows all about service. "Customers approach us with their specific pain points, and we look at what solutions we can offer in terms of an overall plan or strategy," explains Craig Henry, MRO Business Development and Value-Added Solutions Manager at RS South Africa.

"Maintenance, Repair & Operations (MRO) is key to the seamless functioning of supply chains across a range of industries, from equipment and machinery to the processes essential for a company's daily operations," says Henry, adding, "The efficiency of MRO significantly impacts maintenance planning, operational costs, and overall supply chain efficiency."

Managing MRO activities presents many challenges, from inventory optimisation to procurement complexities and effective maintenance planning. "If unaddressed, these can lead to disruptions in the supply chain, affecting productivity and incurring unnecessary costs," says Henry.

Key to supply chain management is identifying reliable suppliers, a critical focus for quality MRO, while

data management is equally important. "Technology is transforming MRO operations, offering innovative solutions to traditional challenges," explains the manager. "It includes the Internet of Things (IoT), predictive maintenance algorithms, and automation and digitisation. The introduction of AI and blockchain on the supply chain side is assisting with traceability," he adds.

"Smart" contracts are another trend, where customers comprehend the value that a stakeholder and partner like RS can add to their businesses. "The traditional 12-month contract is a thing of the past, with companies now requiring a three- to five-year optimisation plan to be rolled out to cut costs over the long term," says Henry.

Asset tracking is equally important, with customers switching to robotics in certain applications as part of the overall trend towards automation. Even 3D printing now presents customers with another tool in their arsenal to secure critical components quickly and conveniently.

"Make sure your objectives and goals are clearly defined. Prioritise what is going in first and what is most compatible. Key stakeholders are crucial. If you do not have their buy-in, any strategy is unlikely to take off properly," concludes Henry.

Enquiries: [www.za.rs-online.com](http://www.za.rs-online.com)





## Is your building intelligently supporting your well-being?

**B**uildings are gathering places for humans, and for its inhabitants to prosper, a building needs to be sustainable, resilient and people centric. It is also this people centricity that requires buildings to be healthy. In fact, studies have consistently shown that healthier buildings lead fewer sick days, which means increased productivity, says Thabang Byl, Buildings Segment Lead at Schneider Electric.

"The reality is that building will always have to deal with outbreaks like the seasonal flu and other infectious diseases while maintaining an overall healthy and productive environment," says Byl. "Building operators and owners must therefore be cognizant of the health of building to ensure the wellbeing of its occupants as well as mitigate potential productivity loss." To this end, building health certifications have over the years gained some important traction, emphasising the importance of creating healthier indoor environments, promoting wellbeing. "As an example, the WELL Building Standard, developed by the International WELL Building Institute (IWBI), focuses on enhancing human health and well-being within buildings, encompassing

categories such as air, water, nourishment, light, fitness, comfort and mind," adds Byl.

Building Management Systems (BMS) and related smart building technologies have an important part play in putting an end to the colloquial 'sick building syndrome'. Building controls can assist in simplifying, improving and automating safe and healthy buildings.

### Making buildings smart & healthier

In South Africa, smart buildings can simplify compliance with legislative frameworks and voluntary certifications aimed at improving building health and safety. Together with WELL, the LEED (Leadership in Energy and Environmental Design) rating system also considers indoor environmental quality.

"Connected devices track everything from room comfort parameters to indoor air quality such as CO<sub>2</sub>, VOC (volatile organic compounds), as well as daily people movement. Every aspect of power conditions and energy consumption is also accurately measured and analysed," explains Byl, adding, "Driven by these inputs, building health and performance can be automatically optimised in a responsive and unified way."

For example, if a rise in CO<sub>2</sub> and/or increased density of people is detected, the BMS will respond by increasing ventilation in that zone. The opposite will also be true; a low occupancy zone will trigger the BMS to reduce ventilation as well as reduce heating,

cooling, or lighting to save on energy. "Here, indoor health is balanced with buildings' efforts to run more efficiently and be environmentally sensitive," says Byl.

The same network of VOC and occupancy sensors can ensure building maintenance crews clean the right places at the right time, helping ensure safety while optimising time and costs. The newest integrated employee engagement smartphone and tablet apps can keep employees informed of 'safe' areas to help avoid overcrowding, give them touch-free control over room comfort, and enable efficient meeting room booking. These and other convenient functions can all translate to gains in productivity.

"Beyond these capabilities, the newest smart building solutions use continuous data collection and analytic tools to simplify building health and performance reporting. Reports can be regularly

shared with third-party testing and building certification organisations," says the expert.

Schneider Electric's EcoStruxure Building collaborative IoT solutions help drive greater visibility and improvement of all aspects of building operations to assist owners' facility managers realise healthier operations.

Enquiries: [www.se.com](http://www.se.com)



Thabang Byl, Buildings Segment Lead at Schneider Electric.

## Seeing the bigger picture – solar power needs to be about more than just building PV farms

**I**mplementing sustainable and renewable energy solutions has become critical in assuring South Africa's future, and one of the avenues being explored is the use of solar power. However, Viren Sookhun, Managing Director (MD) at Oxyon, says, "While several solar photovoltaic (PV) farms have been constructed or are in the process of being planned for, coupled with the fact that many homes and businesses are making use of solar panels to generate their own power, we need to start looking at the bigger picture. From building-integrated photovoltaic (BIPV), to vehicle-integrated photovoltaic (VIPV) and even solar roadways, there are many avenues to explore, and we need to start integrating and incentivising innovative alternatives to solve our energy and sustainability challenges."

### The next big thing

While South Africa is an excellent candidate for the use of solar energy thanks to our climate and daylight hours, the reality is that solar PV farms assume vast tracts of land that then cannot be utilised for anything else – including housing or food production. "To generate enough solar power for our needs, we would have to dedicate massive quantities of physical real estate to the problem, unless we start to think outside of the traditional solar box," says Sookhun. "Rooftop solar systems can help, but only up to a point because there is only so much rooftop space that can be put to effective use for harnessing solar energy."

BIPV, however, is a technology that shows enormous potential, says the MD. "In the Middle East, this concept is being taken to an entirely new level with The Line, a 170km long and 200m wide urban residential concept in Saudi Arabia that will run on 100% renewable energy, in large thanks to BIPV glass that makes up the bulk of the architecture."

While this is an extreme example, BIPV can easily be integrated into new buildings by replacing some or all the facility's glass with specially designed PV panels, without impacting the aesthetics of the building. "BIPV glass can be installed into existing buildings to maximise the generation of solar capacity with high levels of efficiency. In fact, scientists in the Middle East have simulated the use of different BIPV systems on Dubai's high-rise buildings and found that for



buildings with more than seven floors, BIPV may be superior to rooftop power generation."

To drive this change, however, there needs to be incentive from the highest levels, and it needs to be legislated that construction of any new buildings must include smarter and greener methods. Environmental consciousness and sustainability need to become ingrained in everything that we do going forward, says the businessman.

### But why stop there?

BIPV offers exciting potential for SA, but there are many other areas where solar can be integrated to maximise impact. In the Netherlands, solar-powered roadways and bike paths are proving to be promising concepts, and in Switzerland, solar panels could be installed in the spaces between railway tracks. Solar can be deployed on bridges, such as was done on the Blackfriars Bridge in London, which carries 759MW of installed solar power capacity. The banks of major rivers in Bangladesh could be used to generate 15 000MW solar power by 2041 if plans are approved and implemented correctly.

There is also potential for VIPV to help power the millions of vehicles that make use of our roads daily – integrating solar into the roof and windshields of vehicles could help to power the vehicle directly or power an electrolyser to manufacture green hydrogen. "Truck roofs have large real estate for VIPV which could dramatically reduce emissions associated with long-distance freight hauling," adds Sookhun.

It has become increasingly clear that we have reached the point where sustainable and renewable energy sources are no longer an option, but an essential, explains the MD, concluding, "Now is the time to explore the opportunities and find innovative ways of harnessing energy to power our future and drive economic growth and sustainability."

Enquiries: [www.oxyon.co.za](http://www.oxyon.co.za)



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## Harnessing solar power and IoT for efficient South African homes

The blending of technology with solar energy is changing how we view home efficiency and self-reliance, says Ross Mains-Sheard, founder and Chief Executive Officer (CEO) of solar installer Versofy. "There is an incredible opportunity to combine technology with daily home use to create homes that are smarter, more efficient, and more cost-effective. As smart home gadgets and apps become more common, we are seeing developments that are tailored to improve our daily lives and help households save money."

Versofy is championing these upgrades in technology with its Versofy HOME app. "Our entry into the home through solar is just the beginning. Our overarching goal is a sustainable, economical, and efficient world for our customers, where waste is minimised, and energy is optimised," says the CEO. "Versofy's value-added services optimise energy and solar usage, lowering costs and boosting efficiencies."

Mains-Sheard says a necessary shift is taking place, where the focus on using technology, particularly the Internet of Things (IoT), to optimise home energy use. "Consider the traditional home, where energy use is often inefficient. There is a real opportunity to transform this with smart technology to maximise the use of solar energy and reduce reliance on the grid. By tracking energy consumption and production in real time, South Africans can make smarter energy



Ross Mains-Sheard, founder and Chief Executive Officer (CEO) of solar installer Versofy.

decisions to lower usage and costs, and upgrade their system when needed," says Mains-Sheard.

"Apps that accompany solar systems are a great foundation on which other technology can be integrated, including ways to manage and monitor a household's water use. As a water-scarce country, the benefits of this for South Africa are enormous, and it is through examples like these that we see the future of technology in the home," he concludes.

Enquiries: [www.versofy.com](http://www.versofy.com)

## Toolbelt tips

It might seem old-fashioned, but a toolbelt is a handy piece of equipment that allows you to move around a jobsite without the need for lugging heavy toolboxes across unforgiving terrain. Working with a toolbelt like the Milwaukee Electrician's Belt offers several benefits, such as...

**Efficiency:** Having your tools readily accessible on your waist allows you to work more efficiently without having to constantly search for them.

**Convenience:** Instead of carrying tools in your hands or making multiple trips to grab different tools, a tool belt keeps everything you need within easy reach.

**Improved safety:** With tools secured to your body, there is less risk of accidentally dropping them from heights or leaving them lying around where they could cause accidents.

**Reduced strain:** Carrying tools on a belt distributes the weight evenly around your waist, reducing strain on your arms, shoulders, and back compared to carrying them in a toolbox or bag.

**Increased mobility:** You have greater freedom of movement when your hands are free, which can be especially helpful when working on ladders, scaffolding, or in tight spaces.



**Organisation:** Many tool belts come with multiple pockets and compartments, allowing you to organize your tools effectively and quickly locate the one you need.

Working with a tool belt can help you work more safely, efficiently, and comfortably, making it a valuable accessory for many tradespeople and DIY enthusiasts.

Enquiries: [www.za.milwaukeetool.eu/en-za](http://www.za.milwaukeetool.eu/en-za)

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## Lightning safety & asset security

In the lightning series covered by Sparks since 2023, Richard Evert, National Director of the Earthing and Lightning Protection Association (ELPA), has delved into various aspects of lightning protection, including risk management, lightning protection design, the installation of lightning protection systems (LPS), and brief discussions on surge protection measures. "We most recently explored the importance of earth resistance as a crucial factor in minimizing the impact of lightning strikes," says Evert. "Now that the bulk of the storm season is behind us, it is time to reflect on the damage caused by lightning and consider what measures could have been taken to prevent it."

Such post-storm reflection is an essential component of comprehensive risk management practices. "Safeguarding life and property from the threat of lightning requires more than just installing lightning protection systems and implementing surge protection measures," says Evert. "It is equally important to assess whether the implemented solutions are effectively mitigating the risk."

The term 'lightning risk assessment' is often misunderstood as being the sole requirement for managing lightning risk. Risk, as defined in SANS 31000:2019, refers to the effect of uncertainty on objects. This misunderstanding leads to the misconception that risk treatment is an exact science. "While the ideal risk treatment indeed aims for precision, its cost often exceeds what is financially feasible," says the director, adding that "the balance between affordable cost and perceived legal requirements is crucial".

Lightning protection product vendors often emphasise compliance with legal obligations and standards for property owners. However, there is insufficient emphasis on the responsibility of lightning protection solutions designers to clearly communicate technical standards and criteria for lightning protection design to meet the expected requirements.

"While our understanding of lightning protection

continues to evolve as we discover more about the natural phenomena, it has become essential to integrate comprehensive risk management practices into our approach. This includes not only conducting thorough risk assessments but also ensuring effective communication of technical standards and criteria in lightning protection design, alongside reliable lightning statistics and confidence in lightning forensics as the root cause of damage," says Evert, adding that he will cover earthing and lightning surge protection in upcoming editions of *Sparks Electrical News* magazine.

Evert is also chairperson of the SABS standardisation subcommittee on Electrical Installations (SABS TC67 SC06), and the IEC South African National Mirror Committee on IEC TC64 for Electrical Installations and Protection Against Electric Shock. He was also convenor of completed working groups addressing electrical installations in the special locations of medical facilities and solar photovoltaic installations and is convenor of working groups to address earthing and lightning protection. He serves on the SANS 10142-1 wiring code working group and may reference the ongoing considerations to improving both electrical installation standards and the developing work on lightning protection.

Enquiries: [www.elpasa.org.za](http://www.elpasa.org.za)





## Proudly South African: Championing local procurement for economic growth

Since 2018, Proudly South Africa, the mandate of the country's buy local advocacy campaign, has worked with its members to acquire localisation commitment pledges. These pledges act as promises to social and economic change by supporting locally produced goods, which aligns with the President's efforts to encourage local industry.

On 25 March 2024, Proudly SA hosted an event honouring businesses that have demonstrated a commitment to strengthening local procurement within their supply chains. The evening introduced a special localisation segment led by Mr Ebrahim Patel, South Africa's Minister of Trade, Industry & Competition, at the Sandton Convention Centre. Attendees included chief executive officers (CEOs), captains of industry, procurement officials, government representatives, entrepreneurs, members of Proudly SA, and the media.

LESCO Manufacturing, a Proudly South Africa member since 2012, was honoured at this event with its CEO, Jonathan Shapiro, by pledging further commitment to job creation. The electrical manufacturing company's pledge included:

- To further vertically integrate its manufacturing capabilities, thereby creating more jobs
- To further uplift and employ people living with disabilities through various projects and initiatives
- Continued investment in new machinery and equipment installation at a pre-determined period to increase production and employment opportunities.

This commitment to 'local' is not new for LESCO. The company has been championing the African continent for more than 20 years and, through its various initiatives and programmes, LESCO has continued to drive sustainable change in the face of much adversity. "For LESCO, this pledge is more than just a commitment; rather, it serves as a reminder that there is still work to be done in creating jobs, driving inclusiveness, and contributing to country's economic and social development," says the company's CEO.

## Sungrow blossoms in SA

Leading international photovoltaic (PV) system, inverter and energy storage company Sungrow has signed a distribution deal with local distribution giants Herholdt's Group and ARB. "This partnership will further solidify Sungrow's strong presence in South Africa's renewable energy sector," explains Heine Herholdts, Chief Executive Officer (CEO) of Herholdt's.

The deal sees Sungrow committing to provide the country with a comprehensive range of products and services, via its partners Herholdt's Group and electrical distributor ARB. "This diverse offering comprises inverter and storage solutions tailored for residential and commercial use and more," says Herholdts.

Enquiries: [www.herholdts.co.za](http://www.herholdts.co.za)

### Leaders in sustainable change

LESCO Manufacturing is a leader in the manufacturing and distribution of a wide range of innovative electrical products, including but not limited to adapters, surge protection devices, light switches, sockets, multiplugs, and USB products. "Since its inception in 1999, the company has produced over 300 million products, making a significant mark on the industry," says Shapiro, adding that "LESCO remains competitive thanks to its proudly local status, strict quality control and quick response to any specification changes, steadily increasing employment initiatives, and an extensive range of products at

competitive prices, with a commitment to high quality and safety for the local market. All products adhere to local standards and are SABS and ISO 9001-accredited."

Further distinguishing the company is its commitment to providing work opportunities to a diverse range of labour, including low- to high-functioning differently-abled individuals, mostly women and young adults. "By giving equal access to opportunities and resources, LESCO contributes to the nation's growth, helping to drive a strategy aimed at unlocking the country's full economic potential," concludes Shapiro.

Enquiries: [www.lescosk.com](http://www.lescosk.com)



### Localisation Commitment Pledge

We pledge to support the efforts of Proudly South African, by increasing the levels of local content in our production processes and/or manufacturing output. And/or we pledge increased levels of localisation in the procurement of all goods and services required by our business, and through our respective enterprise and supplier development programmes.

**LESCO**  
Manufacturing (Pty) Ltd

As an organisation, we undertake to make a conscious effort to buy and supply locally manufactured goods and services in order to contribute to job creation and to the growth of South Africa's economy.

Your pledge is hereby acknowledged by the Honourable President of the Republic of South Africa, Mr Cyril Ramaphosa and the Proudly SA Board at the Proudly SA Localisation Dinner on 26 March 2024.



**EUSTACE MASHIMBYE**  
CEO, PROUDLY SOUTH AFRICAN  
26 MARCH 2024

**Localisation Commitment Pledge**

We pledge to support the efforts of Proudly South African, by increasing the levels of local content in our production processes and/or manufacturing output. And/or we pledge increased levels of localisation in the procurement of all goods and services required by our business, and through our respective enterprise and supplier development programmes.




[www.lescosk.com](http://www.lescosk.com)



## Embracing Industry 4.0 is key to the electro-mechanical landscape

The electro-mechanical industry is fundamentally being transformed by Industry 4.0, which is ushering in an era of more efficient and innovative practices, says Wesley Vorster, a product manager at electrical giant Actom. "Companies are integrating automation and Artificial Intelligence (AI) at an increasing pace to optimise manufacturing processes, enhance productivity and deliver better solutions to clients."

This technological evolution is not optional, but essential for companies to remain competitive in a rapidly evolving marketplace. "Industry 4.0 is a paradigm shift that is driving industry players into a digital future where they can thrive in an increasingly digitised environment," explains Vorster. "By introducing advanced technologies such as the Internet of Things (IoT), automation, data analytics and AI, Industry 4.0 is reshaping the industry." These technologies create an intelligent digital connection to historically analogue equipment. This assists companies to increase efficiencies, sustainability, and safety of their equipment.

Automation and AI also play a critical role in creating high and continuously improving Overall Equipment Effectiveness (OEE) metrics that in turn optimise manufacturing processes and enhance productivity. "By evaluating these metrics through the use of AI algorithms, businesses can improve many aspects of the manufacturing process. For example, it can reduce downtime, optimise performance, and enhance quality control and efficient changeovers, all through data-driven decision-making," says the manager.

### Increasing profitability

"Data-driven decision-making from real-time data analytics enables organisations to analyse market trends, customer behaviour and operational performance to identify



opportunities to improve, optimise resource allocation and ultimately increase profitability," explains Vorster.

Ultimately, digital transformation enables companies to gather an increasing amount of data about their equipment and processes, while AI is key to learning how to improve, progress and evolve into the next industrial revolution. "This is a key requirement for traditional electro-mechanical companies to remain relevant in a market that demands increasingly innovative solutions," explains the manager, saying that "South African businesses and companies in other parts of the continent are generally making steady progress in terms of adopting Industry 4.0". It is an exciting era that is underscored by large-scale research and development to find solutions to our unique environmental challenges. Organisations are beginning to see the potential benefits and value that these solutions could potentially bring to them and their customers.

However, Vorster reveals that there are a couple of hindering factors at play. "The uptake of digital transformation is to some extent being held back by the prevailing skills gap within the electro-mechanical sector, as well as a fear of change, infrastructure challenges and a lack of access to capital for many smaller companies. Large organisations, along with government initiatives, are at the forefront of Industry 4.0 adoption as they endeavour to stay competitive internationally," he says.

Companies such as ACTOM can help organisations adapt, innovate, and thrive in the digital age while optimising efficiency, sustainability, and safety, concludes Vorster. "The company is a trusted partner for businesses seeking to embrace digital transformation, automation, and a culture of innovation, offering tailored solutions that add real value and ensure long-term success."

Enquiries: [www.actom.co.za](http://www.actom.co.za)

## Intelligent UPS systems are critical for advanced loadshedding

As the South African population, economy and demand on the national grid grow, and no new power stations under construction, loadshedding is likely here to stay in the medium term (despite the recent respite from having our power cut daily). Jessica Masina, Field Product Marketing Manager at electrical manufacturer Eaton, looks at how property owners need to review their emergency energy systems to make more efficient use of their available energy.

"With National Energy Regulator of South Africa (Nersa) recently approving a structure for the implementation of loadshedding up to Stage 16 (shutdown of 80% of the country's available capacity at a given time), South Africans need to consider their emergency power infrastructure much more seriously," says Masina, adding, "Individual homeowners and organisations may need to consider more resilient uninterruptible power supply (UPS) solutions with smart internet-connected capabilities and higher capacity to ensure the functionality of critical devices and appliances during power outages."

### Home essentials

"While the majority of homes can go a few hours without power, using candles, generators, gas stoves or solar powered lamps to provide a temporary respite from loadshedding, some people may want a solid power source for certain essentials.

"People living in high-risk areas, for instance, may need to power outside lights and security systems. Those who work from home or run businesses from home where they need to manage sensitive work data, may need to ensure their routers and computers are always up-and-running,"

adds the manager.

Terminally ill people living at home and using oxygen machines or refrigerated medicines may need an additional layer of uninterruptible power when expensive diesel generators are not available. "In apartment complexes, IPM (Intelligent Power Manager) enables centralised monitoring and control of power devices like UPSs, ensuring system uptime and data integrity through remote management features. With capabilities such as auto discovery, email notifications, and mass node-settings configuration, IPM simplifies the management of devices," says Masina.

### Information technology

In an increasingly digitised and connected world, information technology is being trusted with more of our lives every day, including apps linked to emergency services, like vehicle tracking services, home (school or business) CCTV systems, financial services, communication platforms and more. "Not only could a sudden interruption leave people isolated, improper shutdown of services could lead to corrupted information and even data loss," warns Masina.

### Health & medical care

One of the most vulnerable sectors of society is healthcare, where life support machines, surgery facilities and refrigeration units for organs, medicines and tools cannot afford to be powerless. "Even the smallest clinics in rural areas should be equipped with back-up power to ensure that they can deal with any health emergency and ensure that lives can be saved, as every minute lost could make all the difference," says the manager. "In



critical healthcare settings, Eaton's IPM is relied upon to sustain uninterrupted power." It includes graceful shutdown of compatible storage, power capping of servers, and event-based automation, all essential for maintaining operational stability.

### Automated solutions

While older models of UPS systems may have worked under normal circumstances, newer models using intelligent power management software allow property managers to remotely monitor their facilities. "They can now easily see detailed live data on power consumption, input and output, fault detection

and receive email notification should there be an overload anywhere in the system," says Masina. "The systems are also more energy efficient, providing advanced protection for switches, routers, modems, IP cameras, and demanding IoT applications."

"Users can setup their systems to shut down non-critical appliances, prioritising only the essentials, even when not on loadshedding. For instance, after business hours, the system may be set up to cut power to certain areas until the beginning of the next business day," concludes Masina.

Enquiries: [www.eaton.com/za](http://www.eaton.com/za)

## Upgrade your prepaid meter with peace of mind

There is a very real risk that many users of prepaid electricity meters are facing: "Some South African authorities will not have completed an update needed to keep prepaid electricity meters from going dark," reports William Brederode at news website [www.news24.com](http://www.news24.com). "Any STS (Secure Transfer Specification) meters that are not rolled over will no longer accept credit tokens beyond 24 November 2024."

According to reports, more than 30 000 meters need to be rolled over with the new update each day. "Users whose meters have not been rolled over will no longer be able to load electricity onto their meters beyond that date unless their meter is updated," says [news24.com](http://news24.com). 11 million of the world's 70 million prepaid meters are in South Africa, and they were curiously designed to run out of combinations on 24 November this year. The issue is that of the 11 million prepaid meters in use in South Africa, our failing national electricity generator and supplier Eskom is responsible for the maintenance of 7 million meters – the balance is managed by more than 160 municipalities across the country.

Brederode explains, "It is possible to avoid the issue by updating the meters in a process called token identifier (TID) rollover, which is reasonably simple: Two unique 20-digit numbers, known as key change tokens, need to be generated and entered into every meter, and they will be ready to load new credit tokens after the expiry date." He adds, "Some municipalities started early with the update process and are either finished, or close to finishing, their rollover projects. The City of Cape Town, Ekurhuleni, and Polokwane stand out as success stories, all of which have rolled

over more than 90% of the meters in their supply areas despite having sizeable numbers to update."

### Critical action point

As a result of fears about the rollover of software, a joint statement was released by Eskom, the South African Local Government Association (Salga), the Standard Transfer Specification Association, The SA Revenue Protection Agency, and the Association of Municipal Electricity Utilities.

"Urgent action needs to be taken to make sure that this crisis is averted. There is a high risk that all meters might not be reset before November 2024, which will have a negative impact on the cash income for that electricity or water utility," the statement says. "It is recommended that the relevant authorities that have not done so already should issue the key change tokens directly to customers when they purchase a normal electricity token, as this method is faster than sending a designated task team to visit each meter, generate the numbers and enter them into the meter on users' behalf."

Whether or not that action is yet to be seen, if you have issues or fear that you will not be updated by then, you can buy a new replacement meter from distributors like Voltex. These companies are reputable, they carry quality products, and they are always happy to assist customers, be it end-users or contractors and installers.

"Current industry trends have confirmed that the DIY process is the quickest and most cost-effective method to execute the meter reset programme," says the statement.

Source: [www.news24.com](http://www.news24.com)

## The A.I.M. campaign: Energising ACDC Dynamics' industrial electrical products

In a world where industries rely heavily on automation, robust industrial solutions, and efficient mining operations, electrical distributor ACDC Dynamics is stepping up its game with a comprehensive marketing initiative – the A.I.M. campaign. Short for Automation, Industrial & Mining, this strategic campaign aims to elevate the visibility and market presence of ACDC Dynamics' industrial electrical products to new heights.

At its core, ACDC's A.I.M. campaign is designed to target specific sectors where the company's products play a pivotal role. By focusing on Automation, Industrial & Mining, the campaign speaks directly to the needs and challenges faced by professionals in these industries. Whether it is powering automated systems, ensuring reliable electrical infrastructure in industrial settings, or supporting mining operations with durable equipment, ACDC Dynamics aims to be the go-to solution provider.

The A.I.M. campaign does not stop there, though. It incorporates a multi-faceted approach to engage and captivate its audience. Quarterly specials inject a sense of urgency and excitement, enticing potential customers with irresistible deals and discounts. These specials not only drive sales but also keep the brand top-of-mind for consumers in need of industrial electrical solutions.

Moreover, ACDC Dynamics recognises the importance of education and empowerment in its industry. That is why the campaign includes

training days, providing valuable insights and knowledge to users of its products. By offering training sessions, ACDC Dynamics not only enhances the value proposition of its offerings, it also fosters long-term relationships with customers, positioning itself as a trusted partner in their success.

One of the standout features of the A.I.M. campaign is the innovative road trip with the marketing van. Taking the showcase directly to the Western Cape, ACDC Dynamics brings its industrial electrical products to life in a hands-on environment. This experiential approach allows potential customers to interact with the products, ask questions, and experience their capabilities first-hand. By bringing the showcase to different locations, ACDC Dynamics maximises its reach and exposure, tapping into new markets and attracting a diverse range of customers.

In summary, the A.I.M. campaign embodies ACDC Dynamics' commitment to innovation, customer satisfaction, and industry leadership. By strategically targeting key sectors, offering compelling specials, providing valuable training, and engaging customers through experiential marketing, ACDC Dynamics sets itself apart as a trailblazer in the industrial electrical space. With the A.I.M. campaign, ACDC Dynamics aims not just to meet but to exceed the expectations of its customers, empowering industries to thrive and succeed in an ever-evolving landscape.

Enquiries: [www.acdc.co.za](http://www.acdc.co.za)

## Trina Solar and its partners launch Umoyilanga Avondale PV project

Global smart photovoltaic (PV) solar system and storage expert Trina Solar has continued its massive outreach programme in South Africa by announcing the commencement of module deliveries to the Umoyilanga Avondale 115MW photovoltaic project, developed under a strategic partnership with China Energy International Group and China Gezhouba Group. The project is located approximately 800km from Johannesburg, in Upington, Northern Cape," says Zhao Lei, Head of Strategic Key Accounts for Trina Solar. "This partnership aims to contribute to global energy sustainability."

Given the size of the project, Trina Solar will be supplying some 110 000 panels from its NEG21C.20 Vertex N module range, with the first batch already having been installed. "These specific modules were selected as they are based on the industry-leading 210mm product technology platform and with n-type i-TOPCon Advanced technology innovation, allowing them to excel in power, efficiency, reliability, and levelised cost of energy (LCOE)," adds Lei.

The electricity expected to be generated by the Umoyilanga

Avondale project will be seamlessly integrated into the existing grid infrastructure, with connectivity to the Eskom substation located 32 km away via a 132-kV transmission line. "Upon completion, the Umoyilanga Avondale project is poised to make a positive impact on the local community, economy, and environment," says Lei, adding, "This aligns with Trina Solar's overarching commitment to social responsibility and environmental stewardship."

This project represents a significant step forward in the company's mission to drive sustainable energy adoption worldwide. "Through this collaboration with China Energy International Group and China Gezhouba Group, we are not only addressing immediate energy needs but also laying the foundation for a greener and more resilient future in Africa," says the business head.

Once operational, the Umoyilanga Avondale facility will play a pivotal role in addressing South Africa's power shortage while advancing the nation's energy structure towards low-carbon and green development, says Hu Yuhong, General Manager at China Energy International Group South Africa.

Enquiries: [www.trinasolar.com](http://www.trinasolar.com).

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## Energy meters are the key to cost-saving operation

Awareness of energy consumption is crucial for reducing energy costs and improving the efficiency of machines and electrical assets, says Makan Chen, Head of Global Business Development at electrical manufacturer ABB. "Energy meters play a vital role in identifying areas for improvement, providing significant benefits to owners, facility managers, and users by enabling smarter and more cost-efficient building operations."

Energy meters also allow for splitting utility bills among different households, thanks to MID certification. Sub-metering offers a detailed view of energy consumption, pinpointing specific areas where energy is used.

ABB energy Meters provide essential instrumentation values, including:

- Active power
- Voltage
- Current

### Monitoring power consumption for cost savings

"Energy costs are a critical factor for companies striving to maintain efficient production and competitiveness. Effective energy management and control programs can significantly reduce energy consumption by continuously monitoring usage and adjusting control parameters. Companies that evaluate and analyse data over specific time intervals can interpret results and implement actions to lower energy consumption," says Chen.

ABB offers extensive expertise in energy management and a wide range of low-voltage products that provide operators with performance indicators for communicating, transmitting, analysing, and sometimes automatically routing and regulating electrical distribution.

ABB's energy management solutions provide the following benefits:

- **Interoperability & integration:** ABB products communicate with globally accepted protocols such as Modbus, M-Bus, KNX, ensuring seamless integration and interoperability.
- **Energy meters:** ABB energy meters are DIN-rail mounted devices used in industrial, residential, and commercial buildings to measure and collect electricity consumption data. They are essential for energy management systems or cost analysis. Sub-meters are increasingly used in industrial settings to determine energy costs of specific departments, processes, or product lines.
- **G13 Gateway:** The G13 gateway facilitates the integration of ABB energy meters



into a system environment, providing a single access point to a network of meters. It can connect up to 32 meters on the meter side, accessed through an Ethernet connection on the system side.

- **M2M network analyser:** The M2M network analyser offers expanded analysis functions to optimise energy consumption efficiently. By allowing building operators to view and measure all electrical parameters, energy losses can be detected, and power consumption optimised. The M2M devices also offer conversion functions to measure values in CO<sub>2</sub>/kg and currency, providing concrete and meaningful data for efficient resource use.
- **Circuit Monitoring Systems (CMS):** A CMS

is a multi-channel measurement system for branch monitoring, primarily useful for current monitoring. The system consists of a control unit and sensors connected by a flat cable. The sensors communicate with the control unit through a single line, and their compact size results in significant space savings. Up to 64 sensors can be connected to the control unit.

Chen concludes by saying, "By implementing ABB's advanced energy meters and monitoring systems, businesses can achieve substantial cost savings, improve energy efficiency, and contribute to a more sustainable environment."

Enquiries: [www.global.abb](http://www.global.abb)

## WACO guarantees protection with All-Guard coating

Local electrical distributor WACO Electric continues to give customers peace of mind by supplying products of the highest quality – this includes electrical distribution boxes coated in a protective layer of All-Guard.

All-Guard is an advanced coating solution designed to provide superior protection for various surfaces against environmental and mechanical damage. This type of coating is commonly used in industries such as construction, automotive, marine, and manufacturing due to its durability and versatility. Below, we explore the key features, benefits, and applications of All-Guard protection coating.

### Key features of All-Guard include:

**Durability:** All-Guard coatings are engineered to withstand harsh environmental conditions, including extreme temperatures, UV radiation, moisture, and chemical exposure. This makes it ideal for both indoor and outdoor applications.

**Corrosion resistance:** One of the primary benefits of All-Guard protection is its ability to prevent corrosion. This is particularly important for metal surfaces exposed to moisture and salt, such as in marine or industrial environments.

**Chemical resistance:** The coating offers excellent resistance to various chemicals, including acids, alkalis, and solvents. This feature makes it suitable for use in chemical processing plants and other industrial settings.

**UV protection:** All-Guard coatings provide effective protection against ultraviolet (UV) radiation, preventing damage such as fading, chalking, and deterioration of the substrate over time.

**Ease of application:** These coatings can be applied using various methods, including spraying, brushing, and rolling. It adheres well to a variety of surfaces, including metal, wood, concrete, and composites.

**Aesthetic appeal:** Available in a range of finishes and colours, All-Guard coatings can enhance the appearance of the coated surfaces while providing protection.

### Benefits of All-Guard protection coating include:

- **Extended lifespan:** By protecting surfaces from corrosion, UV damage, and chemical exposure, All-Guard coatings significantly extend the lifespan of the substrates they are applied to.
- **Maintenance cost reduction:** Surfaces treated with All-Guard require less frequent maintenance and repairs, resulting in long-term cost savings.
- **Enhanced performance:** In industrial settings, equipment and structures protected with All-Guard coatings perform better and have reduced downtime due to less frequent corrosion-related failures.
- **Environmental protection:** By preventing rust and chemical leaching, All-Guard coatings contribute to environmental protection, particularly in sensitive areas such as marine environments.
- **Safety:** Surfaces coated with All-Guard are often safer as they are less prone to degradation and structural failure, which can lead to accidents.

All-Guard can be used in various applications, ranging from steel structures and brick-and-plaster buildings, to marine equipment, factory machinery and electrical components.

Enquiries: [www.wacoelec.co.za](http://www.wacoelec.co.za)



## Work Smarter, Anywhere: Unleash Efficiency with Our Battery Powered Hydraulic Crimping Tool!

KIT-BX500ND-1 is an inline cordless hand-held crimping tool which can be operated with one hand and is balanced for greater control. It is suitable for crimping electrical connectors onto conductor cross sections up to 300 mm<sup>2</sup> and uses the die sets common to all CEMBRE 50kN tools and heads.

### The Kit is supplied with

- 1 x crimping tool
- 1 x battery & charger
- Durable plastic carry case
- Set of crimping dies for MExx-50 (25 to 185 mm<sup>2</sup>)

KIT-BX500ND-1 offers the **perfect connection** when paired with Cembre A-M lugs to ensure high-quality consistency of compression crimp joints.

### About Cembre:

Cembre has dedicated over 50 years to crafting and producing solutions for electrical conductor connection and termination. Ranges include connectors, cable lugs, installation tools, cable glands, and both automatic and manual marking systems.

[www.cembre.com](http://www.cembre.com)



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[www.em.co.za](http://www.em.co.za)

## Energy efficiency: Where does it start?

Achieving energy efficiency begins with understanding the total cost of ownership, which encompasses the purchase price, operational losses, risk to installation, and risk to life. To become energy efficient, it's essential to consider all these factors comprehensively, says Dr Andrew Dickson, an engineering executive at electrical manufacturer and distributor CBI-electric: low voltage.

### Impedance, resistance & cost-in circuit breakers

When choosing between hydraulic-magnetic and thermal-magnetic circuit breakers, several factors come into play:

- Product cost
- Operational cost: Primarily influenced by heat dissipation
- Impedance: Consists of an in-phase component (resistance) and an out-of-phase component (reactance)
- Resistance: Dissipates power
- Reactance: Returns power
- Losses: Circuit breaker losses are primarily resistive, manifesting as heat

### Key differences between hydraulic-magnetic and thermal-magnetic circuit breakers sensing units include:

- Hydraulic-magnetic breakers: These utilise a combined sensing unit that detects both overload and instantaneous conditions.
- Thermal-magnetic breakers: These employ separate mechanisms; a magnetic solenoid for instantaneous response and a bimetallic component for the inverse time delay.

### Component complexity & resistance

Thermal-magnetic breakers have more components, increasing opportunities for failure and higher resistance due to the thermal sensing part. This resistance results in heat, leading to energy loss.

In hydraulic-magnetic breakers, the combined sensing unit minimizes resistance and heat generation.



# QA-1(13)

Rating: 20A  
 Curve: 1  
 Breaking Capacity: 3kA  
 Max. energy loss: 2.3 W  
 Decade losses: 202 kWh



### The impact of resistance

Thermal equilibrium occurs when the resistance in circuit breakers increases with heat. Thermal-magnetic devices initially have higher resistance, leading to more heat generation.

Material properties affect how much energy is dissipated. Stacking circuit breakers in a distribution board can also raise temperatures and resistance.

Contact quality is important, as over time, contact tips wear out, increasing resistance.

### Implications for users

**Operational costs increase:** More resistive circuit breakers consume more energy, making them less efficient. Over a lifespan of 25 years, the energy costs of inefficient breakers can surpass their purchase price.

**Total cost of ownership increases:** This includes the purchase price and operational costs. Hidden costs include potential installation risks and safety hazards from non-compliant breakers, which can fail under normal conditions, posing fire risks and endangering lives.

### Energy efficiency labelling scheme

**Assessment & testing:** The energy consumption of circuit breakers must be tested to classify their efficiency. This classification helps estimate the operational costs over a decade.

**Operational costs:** Higher resistive devices are more expensive to operate. An energy efficiency label helps identify and choose more cost-effective and safer options.

In conclusion, achieving energy efficiency in circuit breakers requires careful consideration of resistance, operational costs, and potential risks. Selecting hydraulic-magnetic breakers over thermal-magnetic options can lead to significant energy savings and reduced operational costs over the long term, while also ensuring higher safety standards.

"Look out for this label from CBI-electric: low voltage," says Dr Dickson, "as it guarantees CBI-electric has provided an energy-efficient component that will operate at the highest performance level."

Enquiries: [www.cbi-lowvoltage.co.za](http://www.cbi-lowvoltage.co.za)

## The do's and don'ts of energy measurement & optimisation

Energy measurement is a critical component in managing and optimising energy usage in various settings, including residential, commercial, and industrial environments, says Dylan du Toit, Online Sales Manager at electrical distributor Major Tech. "By accurately measuring energy consumption, businesses and individuals can make informed decisions to enhance efficiency, reduce costs, and minimize environmental impact."

### Here are the key aspects and benefits of energy measurement:

#### Types of energy meters

- **Electricity meters:** These devices measure the amount of electrical energy consumed by a residence, business, or an electrically powered device. They can be analogue or digital, with smart meters providing real-time data and remote monitoring capabilities.
- **Gas meters:** Used to measure the volume of gas consumed. These are essential for billing and for understanding energy usage patterns.
- **Water meters:** Though primarily for water consumption, monitoring water usage can also be tied to energy use, especially in systems involving heating or cooling.
- **Thermal meters:** Measure heat energy in heating systems, essential in monitoring the performance and efficiency of HVAC systems.

### Smart meters & advanced metering infrastructure (AMI)

Smart meters are digital devices that record energy consumption in intervals and communicate that information to the utility for monitoring and billing. They provide numerous advantages, including:

- **Real-time monitoring:** Allows consumers and utilities to see real-time energy usage and adjust improve efficiency.
  - **Detailed analytics:** Helps in identifying patterns and peaks in energy usage, enabling better demand-side management.
  - **Remote communication:** Eliminates the need for manual meter readings and enhances the accuracy of billing.
- "Sub-metering involves installing additional meters to measure energy usage for specific areas or equipment within a building," says Du Toit. This is particularly useful in:
- **Identifying energy hogs:** Pinpointing equipment or areas that consume excessive energy.
  - **Tenant billing:** In multi-tenant buildings, it allows for accurate billing based on actual consumption.
  - **Energy audits:** Providing detailed data for energy audits to identify saving opportunities.

### Benefits of energy measurement

"Accurate energy measurement enables businesses and homeowners to identify and eliminate energy wastage, leading to significant cost savings. By understanding when and where energy is being used, it's possible to make informed decisions about upgrading equipment, changing usage

patterns, or implementing energy-saving measures," says the sales executive.

Measuring energy usage helps in setting benchmarks and tracking progress towards energy efficiency goals. It also aids in identifying opportunities for efficiency improvements, such as upgrading to more efficient lighting, HVAC systems, or industrial machinery.

Reducing energy consumption through effective measurement and management directly contributes to lowering greenhouse gas emissions. This is crucial for businesses aiming to meet sustainability targets and reduce their environmental footprint.

"Regular monitoring of energy consumption can help in predictive maintenance. By identifying unusual spikes or drops in energy usage, potential equipment failures can be detected early, preventing costly downtime and repairs," explains Du Toit, adding that "energy measurement is the foundation for advanced energy management systems that use automation to optimise energy use. These systems can adjust lighting, heating, cooling, and equipment operation based on real-time data, ensuring optimal performance and energy savings.

### Implementation considerations

For comprehensive energy management, energy meters should be integrated with BMS. This allows for centralized monitoring and control, enabling more sophisticated analysis and optimization of energy usage.

The effectiveness of energy



measurement depends on how well the data is managed and analysed. Advanced software can help in visualising energy usage patterns, identifying inefficiencies, and generating actionable insights.

In many regions, there are regulations and standards governing energy measurement and reporting. Ensuring compliance with these regulations is important for legal and financial reasons and can also provide a competitive advantage.

"Energy measurement is an essential practice for any entity looking to optimise energy use, reduce costs, and improve sustainability. By leveraging advanced meters, smart technologies, and detailed analytics, organizations can gain deep insights into their energy consumption patterns and take proactive steps to enhance efficiency and performance.

Implementing a robust energy measurement system is not just about compliance or cost savings, but also about contributing to a sustainable future," says Du Toit.

Enquiries: [www.major-tech.com](http://www.major-tech.com)



## Danfoss integration of BOCK Compressors expands expertise in Africa

Danish multinational engineering group Danfoss has finalised its acquisition of BOCK GmbH, reinforcing its position as a preferred provider of energy-efficient solutions. This deal is transferring to Africa, with Roy Naidoo, Sales Director Sub-Saharan Africa for Danfoss Climate Solutions, expressing his excitement about the transition: "BOCK is a global leader with over 90 years' experience in developing compressors, and has an impressive reputation for quality, climate-friendly technology. The addition of BOCK's product portfolio to our existing range of compressors has given Danfoss the opportunity to tap into new markets and grow our reach within Africa."

As of March this year, the sales of BOCK compressors to resellers, contractors and end users were transitioned to distribution partners, while certain key original equipment manufacturers will continue to be supported directly.

"BOCK's renowned compressors – one of the largest portfolios in the world – are a natural fit for Danfoss' extensive existing solutions range," says Naidoo. "With best-

in-class CO<sub>2</sub> and low-GWP semi-hermetic reciprocating compressors and condensing units, the new BOCK additions to the Danfoss offering solutions will help organisations worldwide to further accelerate energy efficiency and decarbonisation."

The sales director says that innovative technologies for greener cooling and heating will assist Africa in its transition towards more sustainable practices, where we would then, in turn, contribute to global efforts to combat climate change. "The integration of BOCK compressors represents a strategic alignment of a shared vision of using innovation, climate-friendly technology and sustainability to fast-track decarbonised cold chain and heating systems worldwide," adds Naeem Fakir, Sales Driver Sub-Saharan Africa for BOCK. "We believe that the new distribution partnerships will pave the way for significant growth opportunities within Africa and ensure a smooth transition for our local clients."

Enquiries: [www.danfoss.co.za](http://www.danfoss.co.za)



## What causes lithium-ion battery fires?

Where there is a spark, there is a fire. Behind the convenience of lithium-ion batteries lies a potentially hazardous science, says SafeQuip, a leading distributor of fire-related equipment.

### Understanding lithium-ion battery construction

At their core, lithium-ion batteries consist of three essential components:

- Anode:** This is the negative electrode, typically made of a carbon-based material that stores lithium-ions when the battery is charged.
- Cathode:** The positive electrode, often composed of lithium cobalt oxide or other lithium-based compounds, is responsible for receiving and releasing lithium-ions during charging and discharging.
- Electrolyte:** This is like the battery's bloodstream. It is a liquid or gel that helps lithium-ions move around between the cathode and anode. It is important to note that the liquid or gel is flammable.

These elements are sandwiched together and housed within a protective casing. The casing serves as a barrier to contain the potentially volatile materials inside the battery.

### The phenomenon of thermal runaway

Thermal runaway in lithium-ion batteries is a dangerous situation where the battery gets extremely hot, leading to the rapid release of heat and gases that can result in fires or explosions. Several factors can trigger thermal runaway, including:

- Overcharging:** Charging a lithium-ion battery beyond its recommended voltage limits can cause the electrolyte to break down, leading to overheating.
- Physical damage:** Punctures, crushing, or mechanical stress can compromise the structure, allowing internal components to come into contact and generate heat.
- High temperatures:** Exposure to excessive heat, such as leaving a device in a hot car, can accelerate the onset of thermal runaway.
- Manufacturing defects:** Faulty manufacturing processes or substandard materials can weaken the internal components, increasing the risk of thermal runaway.

Potential hazards from lithium-ion batteries include:

- Fire:** When a lithium-ion battery undergoes thermal runaway, it can generate enough heat to ignite the internal materials or surrounding objects. This can lead to a fire, posing a significant safety risk.
- Explosion:** In extreme cases, the build-up of pressure from the gases produced during thermal runaway can rupture the battery casing, resulting in an explosion. While such incidents are rare, they can cause severe injuries or property damage.
- Toxic gas emission:** Lithium-ion batteries may emit toxic gases, such as hydrogen fluoride and phosphorus pentafluoride when they overheat or explode. Inhalation of these gases can be harmful to human health.

### Mitigating the risks

Here are some practical steps to help you stay safe:

- **Use genuine batteries:** Always use genuine, manufacturer-recommended batteries and chargers for your devices. Counterfeit or substandard products are more likely to pose risks.
- **Avoid extreme temperatures:** Keep your devices and batteries away from extreme temperatures, both hot and cold. Avoid leaving them in direct sunlight or inside a hot vehicle.
- **Inspect for damage:** Regularly inspect your devices and batteries for any signs of physical damage, such as swelling, punctures, or leaks. If you notice any issues, replace the battery or device as needed.
- **Charge safely:** Charge your devices on non-flammable surfaces, away from combustible materials. Do not leave them unattended while charging, especially overnight.
- **Store properly:** If you need to store lithium-ion batteries for an extended period, keep them in a cool, dry place with a partial charge (around 50%). Avoid storing them fully charged or fully depleted.
- **Dispose of old batteries:** When it is time to replace a lithium-ion battery, recycle it properly.
- **Invest in a Lith-Ex fire extinguisher:** Lith-Ex fire extinguishers contain AVD – a naturally occurring agent specifically designed for lithium-ion battery fires. AVD is made from the naturally occurring mineral vermiculite combined with water. It is a very effective agent that, cools, encapsulate, prevent propagation, and extinguishes lithium-ion battery fires.

SafeQuip remains dedicated to elevating fire safety standards in South Africa and worldwide, ensuring the effective mitigation of lithium-ion battery fire risks. SafeQuip's lithium-ion fire extinguisher range will soon be accessible through retailers like Makro, Game, MIDAS, Matus, select Buco and Buildit outlets, Takealot, and local fire extinguishing service agents.

Enquiries: [www.safequip.co.za](http://www.safequip.co.za)



## Fluke multimeter allows for precise & reliable measurement every time

Companies like Fluke, distributed in South Africa by Comtest, ensure that its devices are able to deliver the best results no matter the environmental circumstances or situations. Fluke's 83V multimeter packs a lot of power in its punch, delivering accurate readings that are easily read by operators. Here are a couple of things to remember when using a multimeter...



### Measuring DC voltage

1. Turn the dial to DC voltage. Some digital multimeters (DMMs) also include DC millivolts.
2. Insert the black probe into the COM jack.
3. Insert the red probes into the V Ω jack. NB! When you are finished, remove the probes in reverse order: Red first, then black.
4. Connect the test probes to the circuit: Black to the negative polarity test point (circuit ground), and red to the positive test point.
5. Read the measurement in the display.
6. Modern multimeters default to Autorange based on the function selected on the dial. To select a specific fixed measurement range, press the RANGE button multiple times until the desired range is selected. If the voltage measurement falls within the range of a lower DC millivolts setting, follow these steps:
7. Press the HOLD button to capture a stable measurement. It can be viewed after the measurement is complete.
8. Press the MIN/MAX button to capture the lowest and highest measurements. The DMM beeps each time a new reading is recorded.
9. Press the relative (REL) or delta button to set the DMM to a specific reference value. Measurements above and below the reference value are displayed.

### Voltage measurement analysis

- Voltage measurements are normally taken to establish that voltage exists at a given point and ensure that the voltage is at the proper level.
- AC voltages can vary widely (between -10% and +5% of the power source rating) and cause no problems in a circuit. Yet with DC voltages, even small variations may indicate trouble.
- The exact amount of acceptable DC voltage variation depends on the application.
- In some DC applications, large DC variations are not only acceptable but intentional.

Enquiries: [www.comtest.co.za](http://www.comtest.co.za)



## HellermannTyton mechanical hand tool ensures perfect cable management

Leading electrical manufacturer HellermannTyton's EV07i Ergonomics Tool boasts a range of key features that make it a gamechanger in the industry. Its lightweight design and ergonomic handle ensure optimal comfort, while reducing strain on the operator during use. Additionally, the tool's adjustable tension settings and precision cutting capabilities make it versatile and efficient for various applications.

"In the bustling world of manufacturing and construction, where efficiency and safety are paramount, the significance of ergonomic tools cannot be overstated," says Natasha van de Loo, HellermannTyton's Marketing Assistant. "With a focus on user comfort and efficiency, the EV07i fits snugly in the operator's hand, reducing strain and fatigue during prolonged use."

Van de Loo adds, "Other industries that could benefit from using ergonomic tools like the EV07i include the automotive industry, harness manufacturers where workers frequently engage in assembly line operations, and many more where securing cables is critical."

As with any tool, longevity and ease of operation and maintenance is important – and it is no different for the EV07i. "The device is incredibly durable and has low maintenance requirements. It is constructed from resilient and lightweight glass fibre-reinforced polyester components. This tool is built to withstand constant use without compromising on performance, while also being tough should it fall to the ground," says Van de Loo. She adds that HellermannTyton has been cognizant of people having different size hands, saying, "The EV07i caters to this – the way that it has been designed, the tool is comfortable and ergonomic for use by anyone, regardless of their dominant hand and hand size." The reducing the risk of repetitive stress injuries. With its versatile tension settings and consistent performance, the EV07i is a reliable and efficient tool for various applications in the various industries.

Backed by a 12-month warranty, the EV07i provides users with peace of mind, knowing

that they are investing in a product that is built to last. "This assurance underscores HellermannTyton's confidence in the durability and reliability of the EV07i. This warranty provides users with peace of mind, knowing that their investment is protected and that HellermannTyton stands behind the quality of their cable tie tool," concludes Van de Loo.

Enquiries: [www.hellermanntyton.co.za](http://www.hellermanntyton.co.za)







# Serious tools for serious DIY.



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## Beha-Amprobe 2100 multimeter provides additional features

The 2100-Series voltage tester Delta from US-based manufacturer Beha-Amprobe is a feature-rich and rugged device that provides full TRMS voltage testing among others.

"The 2100 Delta has been safety rated up to CAT III 1 000V / CAT IV 600 V, which makes it the ideal product for troubleshooting in industrial and commercial environments," says Peter Müller, Head of Test Equipment Management at Beha-Amprobe's German office. "The device is easy to use yet brings with it a variety of measurement capacities, including checking voltage, current, resistance, continuity and frequency, all in one instrument," adds Müller.

The test probes connect safely to the top of the housing of the instrument when testing for voltage, giving operators an extra hand. "The device simply checks current up to 200A AC by sliding the fixed jaw around the conductor without the need to break the circuit," says the testing executive.

Enquiries: [www.comtest.co.za](http://www.comtest.co.za)



## Tools for your trade

For an electrical contractor, having the right tools is essential to ensure safety, efficiency, and the highest quality of work. The complexity and potential hazards of electrical work demand precise and reliable tools. Here are five of the most important pieces of equipment for an electrical contractor and why they are crucial, according to tool and work advice website [servicetitan.com](http://servicetitan.com):

### 1. Multimeter

**Function:** A multimeter is a versatile device that can measure voltage, current, resistance, and sometimes other parameters like continuity, capacitance, and frequency.

**Diagnostics:** Multimeters are essential for diagnosing electrical issues. They help electricians determine whether a circuit is live, measure the amount of current flowing, and check for continuity in wires and components.

**Versatility:** Modern multimeters are capable of performing multiple functions, reducing the need to carry several different tools.

**Safety:** By accurately measuring electrical parameters, multimeters help prevent accidents and ensure systems are safe before further work.

### Wire Strippers

**Function:** Wire strippers are used to remove the insulation from electrical wires, allowing for clean and effective connections.

**Efficiency:** Properly stripped wires ensure secure connections and prevent issues like short circuits. Wire strippers make this process quick and efficient compared to using makeshift tools.

**Precision:** Quality wire strippers prevent damage to the

wire itself, which can happen if the insulation is removed improperly. This ensures that the electrical connections remain reliable.

**Variety:** Adjustable wire strippers can accommodate different wire gauges, making them suitable for various tasks.

### Circuit Tester

**Function:** A circuit tester, also known as a voltage tester or electrical tester, detects the presence of electrical voltage in a circuit.

**Safety:** The primary function of a circuit tester is to ensure that circuits are de-energised before work begins. This is critical in preventing electric shocks.

**Convenience:** Circuit testers are often simple and quick to use, allowing electricians to swiftly verify the status of a circuit.

**Versatility:** Many circuit testers can be used for both AC and DC circuits, making them useful for a wide range of applications.

### Pliers (including needle-nose and lineman's pliers)

**Function:** Pliers are used for gripping, bending, twisting, and cutting wires and other small components.

**Multi-purpose:** Pliers are versatile tools that can handle a variety of tasks, from bending and shaping wires to cutting and stripping them.

**Strength & precision:** Lineman's pliers are particularly useful for heavy-duty tasks, while needle-nose pliers are ideal for more precise work in tight spaces.

**Reliability:** High-quality pliers ensure that wires are manipulated without damage, maintaining the integrity of the electrical system.



### Fish Tape

**Function:** Fish tape is a tool used to pull wire through conduit and other spaces in walls, floors, and ceilings.

**Wire installation:** Essential for running wire in new construction and renovations, fish tape allows electricians to guide wires through complex pathways.

**Efficiency:** It significantly speeds up the process of wire installation, reducing the labour time required for running wires through conduits.

**Flexibility:** Fish tape can navigate bends and corners, which is crucial in many installation scenarios where a straight path is not available.

## Pratley continues to provide adhesives of the highest quality

Leading manufacturer Pratley recently displayed its full range of industry-leading adhesives at SA Grain's NAMPO Harvest Day 2024 at Bothaville in the Free State. "We are excited to have once again connected with the farming community to showcase our well-known adhesive products," comments Mark Bell, National Sales and Marketing Manager, Pratley Adhesives, adding that the company, who celebrated its 75th anniversary in 2023, considers the event to be a major platform to engage with cooperatives, the farming community, and the public.

Pratley products highlighted at the event (and readily available in stores nationwide) include:

- Pratley GripTack Double Sided Mounting Tape:** Officially launched on 6 May 2024, the tape is ultra-strong for indoor and outdoor use. It can be used on bricks, vehicles, plaster, painted walls, tiles and more. "Many Pratley adhesives are world-first products, and we are proud of our continual innovation and development. That allows us to make our products even better, as well as introducing new products like the GripTack Tape," says Bell.
- Pratley Putty:** The original epoxy-based hand mouldable putty is well-known for its reliability and exceptional bonding characteristics across a range of materials including wood, metal, ceramics, and most plastics for a durable bond that withstands the test of time. Ideal for sealing leaks, filling gaps, and bonding various surfaces, Pratley Putty is a must-have for DIY enthusiasts, craftsmen, and professionals alike. Pratley Putty can be easily moulded by hand and applied directly to the desired surface, offering unmatched convenience and ease of use. From household repairs to industrial applications, Pratley Putty provides reliable adhesion, saving time and resources while

delivering long-lasting results.

- Pratley Quickset Clear:** The adhesive has a fast-curing time for seamless bonds without compromising aesthetics. It is ideal for transparent bonding applications such as glass repairs, jewellery crafting, and model making, providing clarity and precision. Due to its quick-setting formula, Pratley Quickset Clear allows swift and effortless bonding, allowing users to achieve professional-grade results in no time.
- Pratley Steel Quickset:** This product is the ultimate solution for demanding industrial applications, with the added benefit of unparalleled strength and durability. Engineered for maximum strength, it ensures robust bonds that withstand extreme conditions. It is perfect for heavy-duty bonding applications such as metal fabrication, automotive repairs, and machinery assembly. Steel Quickset delivers industrial-strength performance in every bond. With its quick-setting formula and easy to apply, Pratley Steel Quickset streamlines the bonding process. From enhancing productivity to reducing downtime, it provides unmatched reliability and performance for optimal results. "From the home to the workshop or on the job site, Pratley adhesives provide peace of mind and reliable performance, ensuring that every repair is handled with precision and efficiency," concludes Bell.

Enquiries: [www.pratleyadhesives.com](http://www.pratleyadhesives.com)



## Nikki hard hats exceed industry norms with protection power

The Nikki brand of hard hats from BBF Safety Group is one of the most popular and trusted brands in the personal protective equipment (PPE) industry, with over 15 years of continued service across South Africa's toughest industries including mining, construction, forestry, and power generation. "Nikki has been very successful, working with customers and developing locally for South African environments," says Deane Nothard, BBF's Marketing Manager.

The Nikki 1 hard hat strays from traditional design and construction, with the hard hat being made from 100% virgin ABS (Acrylonitrile Butadiene Styrene) plastic. "This allows for significantly higher durability and strength," says Nothard. "The Nikki 1 is a premium hard hat for particularly arduous applications, but at a mid-level price point that continues to boost its popularity. Nikki 2 utilises the more widely used polypropylene (PP) material but ensures consistent quality with a commitment to 100% virgin PP materials rather than including any regrind material that could compromise strength and durability." Both hard hats feature a unique bridged construction design, giving the shells incredibly high levels of side-impact protection.

The Nikki 1 and 2's inner shell has been engineered with reinforced ribs for increased protection against impact. "What makes the Nikki brand stand out is that it has been designed to exceed EN 397: 1995 for lateral deformation," explains Nothard, adding that "independent testing has shown Nikki shells to have up to three times

the resistance to lateral deformation than competitor products. This is a good indicator of the strength and durability".

Surprisingly, testing for lateral deformation is optional in South Africa, but international standards are changing to incorporate it as compulsory. "We can assume these changes to filter through to South Africa soon," notes Nothard. "A good indication of a hard hat's strength is to try bend it inwards from the sides. It is scary to see how easily other hard hat brands fold with little pressure; especially if you carry out a comparison against a Nikki."

Testing on the Nikki 1 includes optional testing for electrical resistance, allowing BBF to claim 1 000 V resistance. In reality, it has pushed that testing to 4 000 V, the maximum the test apparatus could run at, with no significant leakage. "Combine this with the hard hat's 18 Cal/cm<sup>2</sup> arc rating and you understand why Nikki is ideally suited for use in electrical environments," concludes the Marketing Manager.

Enquiries: [www.bbfsafety.com](http://www.bbfsafety.com)





## Radiant helps you transform outdoor spaces in style

When considering garden and patio lighting, illumination master Radiant says that it is vital to take into account factors such as light, security and how well the light fittings and fixtures enhance the allure of the area you are working on. "From illuminating pathways, to highlighting architectural features, strategic placement of outdoor lights can transform a space into a mesmerising oasis while providing peace of mind," says Radiant.

Bulkhead lights, with their robust design and diffused illumination properties, are ideal for illuminating entryways and dark corners. "These types of lighting fittings serve as a deterrent against intruders while creating a welcoming ambiance," says the team at Radiant, adding, "These fixtures offer versatility, and they seamlessly blend into any number of architectural styles without detracting from the layout."

Wall lights, on the other hand, offer a more focused beam of light, says the lighting giant. "Wall lights are perfect for accentuating façades, doorways, and outdoor living spaces. Whether they are mounted beside a door or along a patio wall, this type of lighting add a touch of sophistication while enhancing visibility and security at the same time."

Radiant manufactures more than just fixed lighting - it also has garden spikes in its catalogue. "Due to their slender profile and adjustable heads, garden spike lights are the perfect solution for illuminating pathways, flower beds, and other garden features. Their subtle presence allows them to seamlessly integrate into the landscape, casting enchanting shadows and guiding visitors safely through the night," says Radiant.

For those outlying areas, the lighting company suggests solar floods as an option, especially a model with high lumen ratings. "Many new security cameras come with built-in spotlights that allow the cameras to operate in full colour, as well as acting as a deterrent to would-be intruders. This allows the homeowner to make even the most remote of corners on their properties safe and secure," says Radiant.

By incorporating a combination of these light types, homeowners can achieve a harmonious balance between security and beauty in their outdoor spaces. "Whether it is creating a welcoming entrance, enhancing architectural details on the exterior of your property, or illuminating garden vistas, outdoor lighting offers endless possibilities for elevating the ambiance and functionality of any home," says the Radiant team.

Enquiries: [www.radiant.co.za](http://www.radiant.co.za)



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Find out more at [www.radiant.co.za](http://www.radiant.co.za)

## Signify CEO reappointed

Lighting manufacturer Signify has voted that its Chief Executive Officer, Eric Rondolat, be reappointed for a further four-year period.

Despite a 14% annual decrease in earnings per share over the past three years and a 12% drop in revenue last year, the board backed Rondolat, proposing his reappointment to signal confidence in his leadership.

The 57-year-old joined Philips Lighting in 2012 and has remained a steady leader through significant industry changes. Over the past 12 years, he navigated the transition to LED technology, corporate spin-offs, and major rebranding efforts. Six years ago, he led Philips Lighting's spin-off from Royal Philips, creating Signify, now the world's largest pure-play lighting company.

Rondolat's current four-year contract, expiring tomorrow, included managing global COVID-19 lockdowns and acquiring Cooper Lighting, a \$1.64 billion company, at the pandemic's onset.



Chief Executive Officer, Eric Rondolat

Source: [www.signify.com](http://www.signify.com)

JHB 011 386 0000

CPT 021 521 2500



## BEKA Schröder updates Western Cape interchange illumination

Lighting manufacturer BEKA Schröder has supplied the LED lighting solution to the newly constructed Refinery Interchange in Cape Town, Western Cape province. "The Refinery Interchange is located at the juncture of Trunk Road and Platteklouf Road, and the main objective of this upgrade was to improve the capacity and safety of traffic operations at the Refinery Interchange," says Grant Kemp, a sales engineer at BEKA Schröder.

This project grew in size and involved the demolishing of an existing interchange bridge that had a substandard vertical clearance, and replacing it with two new bridges over the N7. "Platteklouf Road has been upgraded to a dual-carriageway system. Four interchange ramps have been widened, and the two interchange terminals have been upgraded," explains Kemp, adding, "BEKA Schröder has supplied the South-African designed and manufactured LED streetlights."

### Streetlight solution

BEKA Schröder's LEDLUME-MIDI



and LEDLUME-MAXI streetlights have been installed around the interchange. Kemp says that these luminaires have been designed and manufactured in South Africa, taking the continent's harsh environmental conditions into account, ensuring maximum product lifetime.

"The LEDLUME range offers optimised photometrical performance with a minimum total cost of ownership. It has provided the customer with the ideal tool to generate energy savings, improve lighting levels and reduce

maintenance costs."

The great variety of high-performance optics optimises the photometric distribution for this specific application to achieve minimum energy consumption and unsurpassed light uniformity.

The LEDLUME range offers flexible combinations of LED modules, a choice of currents and dimming options to further maximise energy savings and provide the most cost-effective solution.

Enquiries: [www.beka-schreder.co.za](http://www.beka-schreder.co.za)

## Adaptive lighting takes over

Customisable and adaptive lighting is transforming office environments, offering functional benefits while enhancing the overall workplace experience. These advanced lighting systems adjust based on user preferences, the tasks being performed, time of day, and natural light availability. Let's explore the key aspects and benefits of customisable and adaptive lighting.

**Personalised control:** One of the standout features of customisable and adaptive lighting is personalised control. Employees can adjust the lighting at their workstations to meet their individual needs through mobile apps, desktop interfaces, or wall-mounted controls. Smart desks equipped with sensors and controls allow workers to tailor lighting settings, such as brightness and colour temperature, to their liking, creating a more comfortable and efficient workspace.

**Task-specific lighting:** Customisable lighting systems also offer task-specific solutions. Different office areas can have distinct lighting setups optimised for specific activities. For instance, collaborative zones might benefit from brighter, cooler light, while quiet zones can have softer, warmer light to foster concentration. Adjustable fixtures that can be repositioned or have adjustable beams help focus light where it's needed most, reducing glare and enhancing visibility for various tasks.

**Dynamic lighting systems:** Adaptive lighting systems dynamically adjust throughout the day to support natural circadian rhythms. By changing colour temperature and intensity, these systems help improve alertness, productivity, and well-being by mimicking natural light patterns. Additionally, daylight harvesting sensors detect the amount of natural light entering the space and adjust artificial lighting accordingly, maintaining consistent illumination levels while saving energy.

**Energy efficiency:** Energy efficiency is a significant advantage of adaptive lighting systems. Occupancy sensors ensure that lights automatically turn on or off based on room usage, preventing energy wastage in unoccupied spaces. Dimming capabilities allow lights to be adjusted to match specific task requirements or to save energy when full brightness is unnecessary, further reducing operational costs.

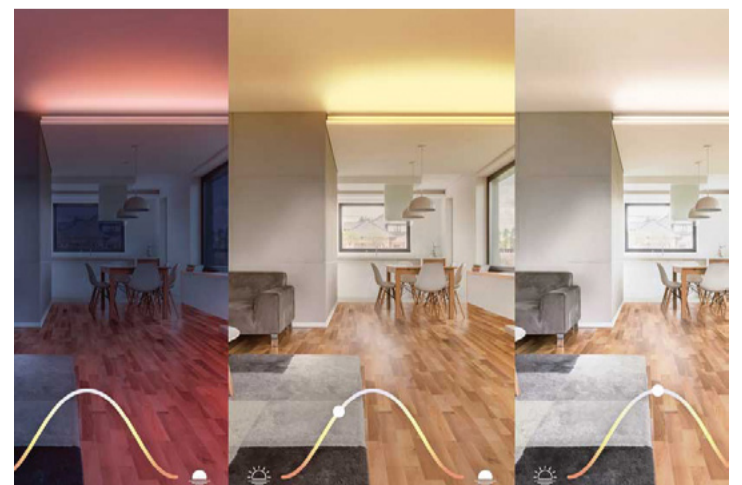
**Enhanced productivity & comfort:** Allowing individual control over lighting settings enables employees to create an environment that reduces eye strain and fatigue, leading to higher productivity and comfort. Adaptive lighting that supports circadian rhythms also contributes to better sleep patterns, mood, and overall well-being for office workers.

**Aesthetic appeal & flexibility:** Modern, sleek lighting designs can significantly enhance the aesthetic appeal of an office, creating a more attractive and pleasant working environment. Additionally, adaptive lighting systems offer flexibility and scalability, allowing them to be easily reconfigured as office layouts and lighting needs change over time, providing a long-term, adaptable solution.

**Implementation considerations:** To maximise efficiency, customisable and adaptive lighting systems should be integrated with the overall Building Management System (BMS), allowing for centralised control and monitoring. While the initial cost of installing these systems may be higher, the long-term energy savings and benefits to employee productivity and well-being provide a substantial return on investment. Ensuring that employees are adequately trained to use these systems effectively is also crucial. User-friendly interfaces and thorough training sessions can help in maximising the benefits of these advanced lighting solutions.

Customisable and adaptive lighting represents a forward-thinking approach that aligns with the evolving needs of modern office spaces. By offering personalised, task-specific, and energy-efficient lighting solutions, businesses can create more productive, comfortable, and sustainable work environments. Embracing these innovative systems is not only a step towards greater efficiency but also towards enhancing the overall quality of the workplace.

Material courtesy of [www.v2-com.newswire.com](http://www.v2-com.newswire.com)



## Smart lighting solutions for DHL Midrand: A case study

Illumination specialist Regent Lighting Solutions was approached by Rawlins Wales & Partners to collaborate on the lighting design and supply for DHL's Midrand facility. "DHL required a sophisticated lighting control management system with Building Management System (BMS) integration to monitor and manage energy consumption, occupancy and operational efficiency," says Regent. "The system also needed to generate scheduled reports on operational data and faults, providing user-friendly visualisation for easy interaction."

### Intelligent lighting control

For DHL, data-driven insights are crucial, but equally important is functional lighting control. Features like motion sensing, daylight harvesting, and automated scheduling are essential to meet DHL's energy reduction targets and their net-zero emissions goal by 2050.

**Exterior lighting:** Facing the N1 highway, the building's exterior needed effective lighting with minimal glare for passing traffic. The car park and perimeter are lit

by Istria Amenity lights, mounted at 8.2 metres, and are controlled with Bluetooth nodes, allowing them to dim during certain nighttime hours.

**Entrance:** IP 65 Linear Mini lights were installed in the overhead canopy, and silver bollards were positioned on either side of the main entrance stairs.

**Side of warehouse & canopies:** Istria floodlights and Geo bulkheads were mounted on the canopies and building sides, with Nasa lights under the canopies.

**Office block façade:** Vertical strip lights adorn the north and south façades, while Brite Walkway lights on the west façade's diagonal columns create a dramatic effect.

"This comprehensive lighting solution not only enhances DHL's operational efficiency but also supports their sustainability goals. By integrating advanced lighting controls and energy-efficient fixtures, DHL is well-positioned to achieve significant energy savings and reduce their carbon footprint," concludes Regent.

Enquiries: [www.regentlight.co.za](http://www.regentlight.co.za)



## Track lights enjoy their time in the sun

**D**id you know that track lighting has been around since the late 1960s? It is hard to imagine these fittings were around at the time that Neil Armstrong set foot on the moon, and they're still going strong, says lighting expert Eurolux.

Having gained popularity in art galleries and museums to highlight artworks and features, track lighting hit the mainstream in retail stores in the 1970s and was gradually embraced in upmarket home settings.

Now, with an ever-expanding selection of fittings available, track lighting has come into its own once again, and these contemporary fixtures can be used to create a unique tailored look which simultaneously enhances a space, and highlights features as required.

There are different applications, which Eurolux unpacks below:

### 3-Wire Track Lights

These are commonly used in homes and commercial spaces. They have three wires: Power, neutral, and earth. They are easy to install, having only one circuit, and they are perfectly suited for uncomplicated lighting setups, offering the basic benefit of accent and task lighting in desired positions along the length of the track.

### 4-Wire Track Lights

They are similar to 3-wire lights, but with an additional wire that can be used for either dimming or brightness control. They offer more flexibility and control but may require slightly more effort for installation due to the extra wire. If you are looking for more advanced dimming features such as colour temperature adjustment or scene pre-sets, then a four-wire set-up is the best option.

### Magnetic Track Lights

They make use of magnets for power instead of traditional wiring. They attach magnetically to conductive strips on the track, allowing for easy repositioning. The



tracks are low maintenance, with dimmable fittings in pendant, spotlight or track light format. Installation is simple as there is no need for individual wiring. Given the sleek design of the tracks, they are also clean-lined and minimalist. This makes magnetic tracks the most elegant and versatile of the track light options that are available.

When selecting a track light to suit your need, be sure to choose the spots or pendants that are intended for that track system type. It is worth noting, too, that it

is best to order your track and fittings from a single supplier to ensure compatibility throughout your setup and installation. When in doubt, get the advice of a skilled electrician, or ask your lighting company for advice.

With a world of track light options at your disposal, you can create an environment to suit your mood, whether it from retro to modern and anything in between.

Enquiries: [www.eurolux.co.za](http://www.eurolux.co.za)

## Smart, off-the-grid floodlight security



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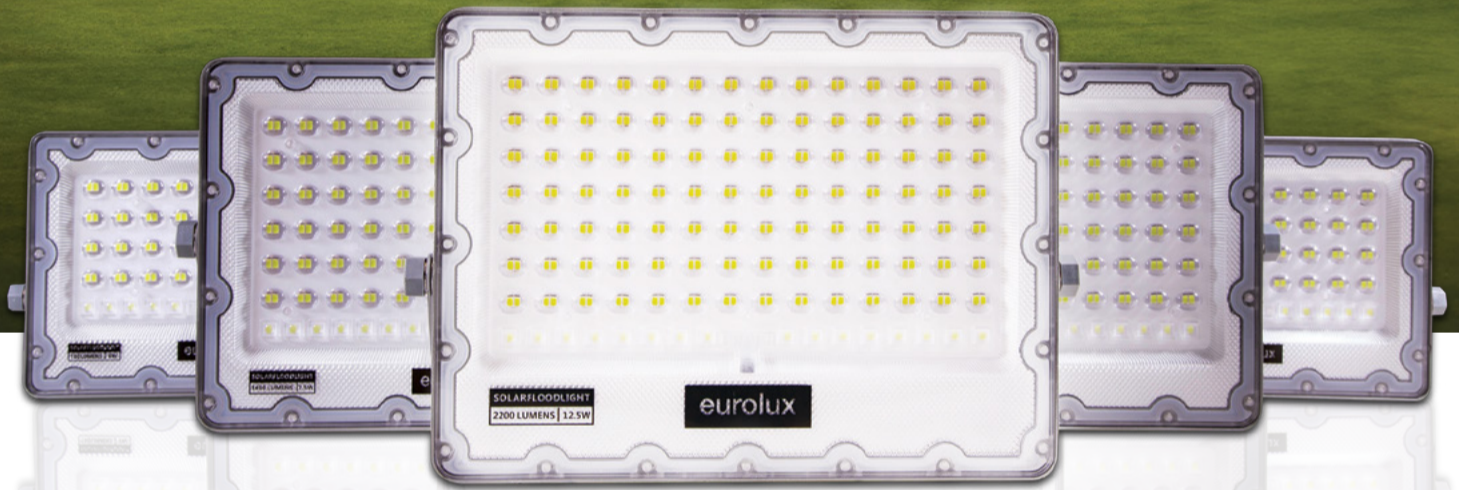


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## ams Osram sells stock to Focuslight

**L**ighting giant ams Osram has sold relevant Passive Optical Components to Chinese business Focuslight Technologies.

The deal, worth EUR 45 million was concluded in a cash transaction, with Aldo Kamper, Chief Executive Officer of Osram saying, "With our strategic efficiency program 'Re-establish the Base', we have promised as one key element to exit the non-core portfolio in our semiconductor business. Now we deliver another important step and announce the sale of relevant Passive Optical Components assets to Focuslight Technologies Inc., who is an excellent home for them. ams Osram continues executing its 'Re-establish the Base' program according to plan."

This comes as ams Osram continues to prioritise the carve-out of some of its business units in a divestiture program. The transaction is subject to closing conditions that includes approvals by the shareholders of Focuslight Technologies Inc. and Chinese regulatory authorities. It is expected to close in the third quarter 2024.

Enquiries: [www.ams-osram.com](http://www.ams-osram.com)



When choosing an LED fitting, look for the 'lumens' rating, rather than the 'wattage' for a more accurate indication of the brightness you can expect.

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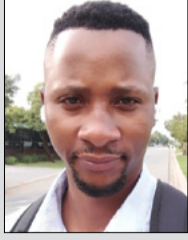


Aberdare Cables



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Process Engineer

Comtest



**Molefe Vincent**  
Sales Administrator

CSI



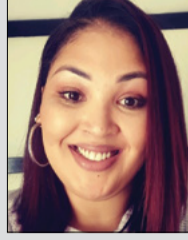
**Wynand Taljaard**  
Solution Analyst

Three-D Agencies



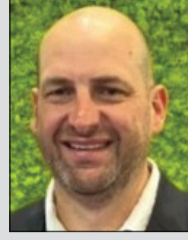
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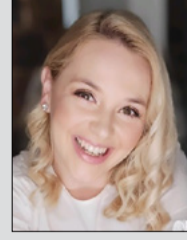


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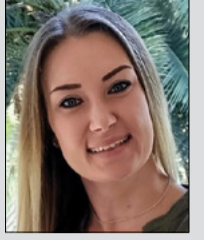
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## BRIGHT SPARK

### SMART DAD

Jacob's dad could not stop his son from playing video games. As soon as he wasn't watching Jacob, he would be back on playing away. Jacob's dad decided to fix the problem permanently. He grabbed his hammer and solved the problem. Jacob could not play anymore, however, Jacob's dad could do so. What did Jacob's dad do?

### MAY SOLUTION

The woman is terrified of flying, but must travel to see a dying relative; this adds to her emotional turmoil. Her husband does his best to comfort her during the few hours of the flight.

#### JULY 2024 FEATURES

- Cables and cable accessories
- Standby and emergency power
- Lighting

#### AUGUST 2024 FEATURES

- MCCs and motor protection
- Energy efficiency
- Lighting

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