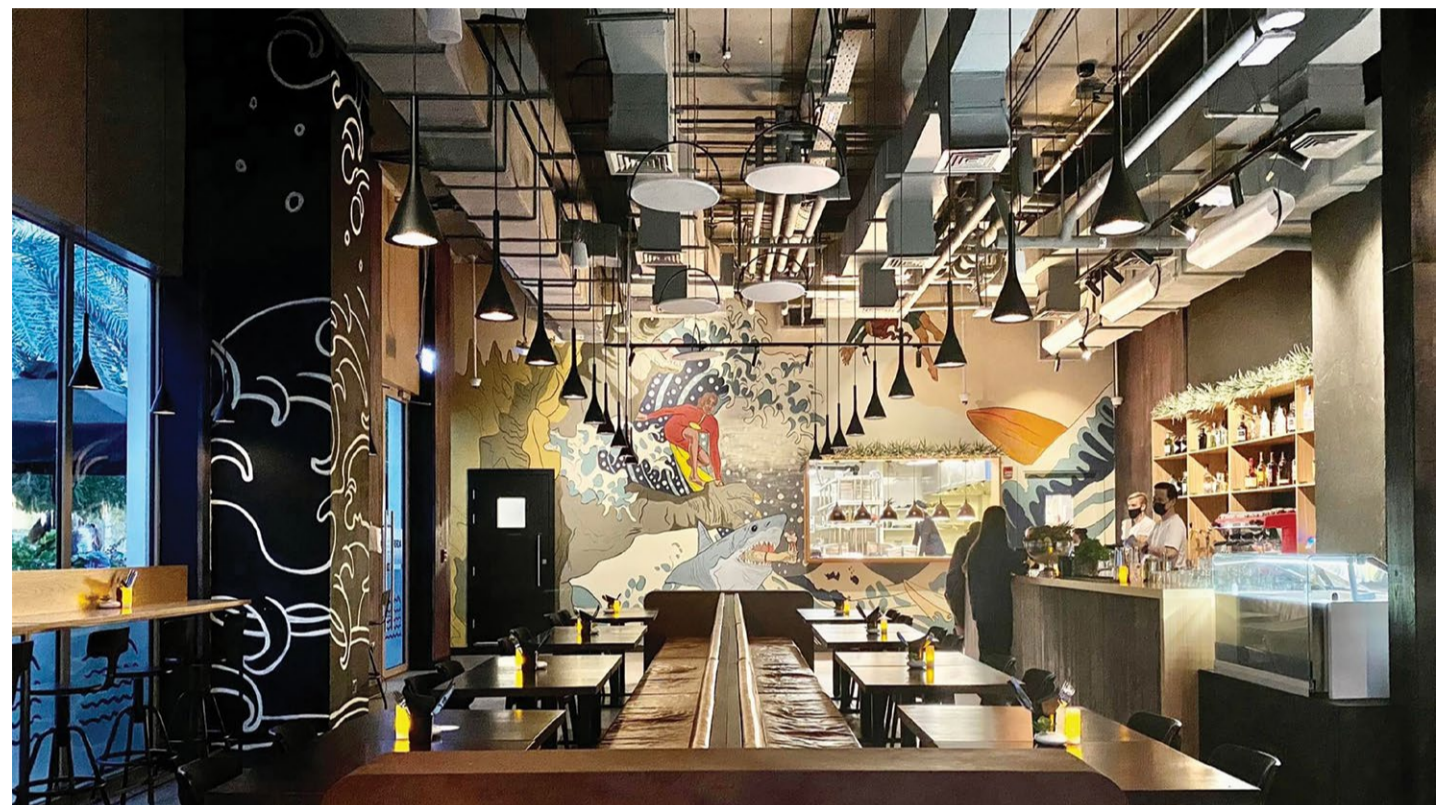


## ENERGY EFFICIENT LIGHTING, WHERE TO FROM HERE?

By Henk Rotman, IESSA Gauteng chair



As LEDs become more prevalent globally, it is crucial to prioritise efficiency over price to capitalise on the significant potential for reducing energy consumption. Making lighting more efficient – getting more Lumens out of each Watt put in – has been a significant objective for the lighting industry since the days of incandescent lamps. Over the past 15 years, lighting has made huge progress in reducing energy use thanks to the conversion to LEDs and policies like banning inefficient products.

### The lighting challenge

The International Energy Agency (IEA) annually tracks energy use by major technology. Their most recent data (2022) shows that lighting is one of the few technologies considered on track.

However, IEA's data shows that the lighting industry faces a significant challenge. Although 2022 saw continued progress in the use of LEDs and increasing lighting efficiency, electricity consumption for lighting actually increased for this year. The greater efficiency simply could not offset the increased use of lighting.

While numerous countries began to phase out incandescent lamps more than ten years ago, many are now eliminating fluorescent lamps as well, making LEDs the dominant lighting technology. About 50% of global residential lighting sales are for LED technology.

To achieve the goal of reducing lighting's share of global electricity consumption to 8% by 2030, we must both increase the adoption of LED technology and enhance the efficiency of the LED lighting systems being installed and used. Improving the efficiency of LEDs creates massive potential for the lighting industry.

### Improving LED efficiencies

LEDs have become increasingly efficient over the years, but the efficiency gains are now tapering off. When it comes to efficiency, LEDs are like cars – the efficiency goes down when you run them harder (aka operate them using a higher operating current). Running LEDs harder increases the light output

and decreases the product costs, but simultaneously, it also decreases efficiency and lifetime.

Running the LEDs more gently (by lowering the operating current) increases the efficiency and lifetime, as well as product costs (as more LEDs are needed to achieve the required light output).

The market reality is that price is the most crucial consideration for most LED-based solutions, so the majority of LED products are operated at the highest possible operating current, sacrificing efficiency in favour of price.

Doing the opposite, prioritising efficiency over price, creates huge potential for reducing energy consumption. Multiple factors are at play to steer the market in this direction:

**Increased electricity prices:** South Africa's electricity rates have risen roughly 500% since 2008, with another big increase announced for 2025. This makes running costs (OPEX) the main cost factor for most LED-based solutions rather than initial costs (CAPEX).

**Increased use of alternative energy solutions, especially solar:** When converting from grid power to solar power, the usual way of working is to make the installed equipment (including lighting) as efficient as possible, as this will reduce the required investment in solar panels, storage batteries, etc. With all metros in South Africa announcing legislation that requires new buildings to achieve zero carbon emissions from 2030 onwards, this means a major push for the most energy-efficient LED-based solutions

### More to be done

Although lighting has made considerable strides in decreasing energy consumption and is one of the few technologies labelled on track by the IEA, this is not the end of the road. There is still great potential for improving the efficiency of LED products. Ever-rising electricity tariffs and the Race to Net Zero are key factors driving the local market in this direction.

CONTINUED ON PAGE 8



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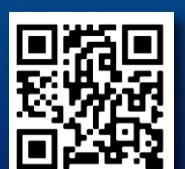
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## JB Switchgear Solutions: empowering the future of electrical infrastructure

In today's rapidly evolving industrial landscape, reliable and safe electrical infrastructure is crucial to support the growing demands of mines, industries, utilities, and commercial establishments. One company making a significant impact in this domain is JB Switchgear Solutions, a leader in designing and manufacturing switchgear solutions.

With a focus on high-quality electrical equipment, cutting-edge technology, and customer-centric services, JB Switchgear Solutions has emerged as a key player in revolutionising the low-voltage power distribution sector.

"JB Switchgear Solutions, a proudly B-BBEE Level 1 company, is leading the efforts to produce goods locally, with an emphasis on innovation, sustainability, and adapting to regional markets," says Sharad Hingorani, managing director of JB Switchgear Solutions, who took charge in September 2023.

"As we continue to innovate and expand at JB Switchgear Solutions, our commitment to delivering high-quality, reliable electrical solutions remains unwavering. With our team's expertise, a focus on sustainable growth, and dedication to exceeding industry standards, we are proud to empower small businesses around us. Our efforts to diversify our product range, coupled with our ISO 9001 certification and SABS-marked products, reflect our passion for excellence and our drive to provide solutions that ensure safety, efficiency, and

performance," Hingorani adds.

Founded in 2012, JB Switchgear Solutions is a Gauteng-based company on the East Rand of Johannesburg specialising in the design, manufacturing, and supply of electrical switchgear and associated enclosures. The company has garnered recognition for its innovation, exceptional craftsmanship, and commitment to providing sustainable and efficient engineered solutions.

One of the JB Switchgear group's standout features is its ability to provide tailor-made switchgear solutions that cater to the unique requirements of various industries. The company's operations highlight the importance of local manufacturing excellence and adherence to South African Bureau of Standards (SABS) certifications, as their panels carry the SABS mark.

### Key offerings:

- Motor Control Centres (MCCs): fixed and withdrawable patterns.
- Custom-designed switchgear: tailored solutions for specific requirements, including modular designs.
- Patented gulley boxes (up to 1,000 V): developed for underground and surface operations.
- Patented slide-type isolators: revolutionising electrical isolation and safety.
- Uninterrupted Power Supplies (UPS) and inverters in various voltages and back-up time.

### Acquiring ECP Sheet Metal

In its sustainability and local development efforts, JB Switchgear Solutions acquired ECP Sheet Metal in 2022.

ECP Sheet Metal, now a subsidiary of JB Switchgear Solutions, exemplifies these values in the realm of sheet metal fabrication. This division focuses on delivering high-quality, custom-made metal enclosures for industries that require both exceptional durability and precision, making it a critical part of JB Switchgear Solutions' larger portfolio of products and services. As an integral part of JB Switchgear's mission to provide comprehensive, cost-effective solutions, ECP Sheet Metal plays a vital role in supporting its customers' needs across various sectors.

### ECP Sheet Metal offers:

- Custom sheet metal fabrication: design, cutting, bending, and laser welding of high-quality sheet metal products.
- Laser cutting and punching: precision laser cutting and punching for complex designs and shapes.
- Powder coating and finishing: surface treatment options that enhance durability, appearance, and resistance to corrosion.
- Prototyping and production: from initial design prototypes to large-scale production runs, ECP provides end-to-end solutions.

In the group's effort to diversify and offer a comprehensive solution, the company now also offers a range of UPSs and inverters. The range includes modular and



JB Switchgear Solutions managing director, Sharad Hingorani.

monolithic-type UPSs designed to customer specifications. It includes 110 V/ 110 V, 230 V/ 230 V and 380 V/ 380 V and comes in various kA ratings.

### A trusted partner in comprehensive electrical solutions

With a reputation for innovation, quality, and service excellence, JB Switchgear Solutions Group is helping shape the future of African electrical infrastructure. Its expertise in delivering customised solutions makes it a trusted partner for industries seeking reliable switchgear systems. Guided by a vision of innovation, growth, and customer-first solutions, the company is poised to continue delivering cutting-edge electrical systems while maintaining its formidable reputation as a trusted solutions partner.

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## Surge protection from ACDC Dynamics: A shield against lightning season

With lightning season on the horizon, the importance of surge protection cannot be overstated. In regions prone to thunderstorms, power surges caused by lightning strikes or grid switching can severely damage your electrical systems, leading to costly repairs and downtime. ACDC Dynamics offers a wide range of surge protection solutions to safeguard your equipment and systems, ensuring that lightning strikes don't compromise your operations.

### Why surge protection is essential

Power surges occur when there is a sudden spike in voltage through an electrical circuit. While these surges may last only a fraction of a second, they can deliver thousands of volts, enough to damage or destroy electronic devices. Lightning strikes, in particular, are the most severe cause of these surges, and without adequate protection, homes, businesses, and industrial setups are left vulnerable.

### Surge protection and insurance policies

In addition to physical damage, power surges can also impact your insurance coverage. Many South African insurers now require surge protection devices (SPDs) to be installed in homes or businesses to qualify for coverage. Some policies mandate the installation of SPDs to prevent surge-related damage, while others offer discounts or



reduced premiums to customers who install certified SPDs.

Without proper protection, claims for damage caused by power surges could be denied, leaving you responsible for costly repairs. This makes surge protection not only a smart safety investment but also a way to ensure your insurance claims are valid.

### Our surge protection solutions

ACDC Dynamics provides tailored solutions, working with globally recognised brands that ensure top-tier protection for residential, commercial, and industrial settings. Some of the leading surge protection brands it offers include:

- Dehn: Industry-leading in lightning and surge protection, ensuring high-level safety for electrical systems.
- Gewiss: Known for reliable surge protection devices designed for low and medium-voltage systems.
- Eaton: Provides robust surge protection devices suitable for various applications, from residential to industrial.
- C&S: Specialists in industrial protection, C&S surge protectors are designed for environments where durability and performance are essential.

With these trusted brands, you can be confident that our surge protection range covers all bases, offering maximum protection for critical equipment.

### Types of surge protection

Surge protection is not one-size-fits-all. Different applications require different levels of protection. ACDC Dynamics offers:

- *Type 1 surge protection:* Designed to handle direct lightning strikes, these devices are typically installed at the main distribution board.
- *Type 2 surge protection:* Used downstream from the main distribution, these devices protect against indirect surges and electrical switching.
- *Type 3 protection:* Installed close to sensitive equipment, such as computers or electronics, these offer extra protection against residual surges.
- *Data and communication line protectors:* Surge protection extends beyond just power lines. SPDs for data and communication lines are critical in safeguarding devices like modems, routers, and network equipment from surges that could come

through phone or Ethernet cables.

- *Combined type 1/ type 2 devices:* For comprehensive protection, especially in areas with frequent storms, combined surge protection devices offer the best of both worlds by addressing both direct and indirect surge events.

### Act now, protect for the future

Lightning season poses a real threat, but you can avoid costly repairs and operational downtime by investing in the right surge protection. "At ACDC Dynamics, we are committed to helping our customers safeguard their electrical infrastructure," the company said. "Our expert team will help you choose the right protection based on your specific needs, whether for home use, business operations, or large-scale industrial applications."

Prepare now for the stormy months ahead with ACDC Dynamics as your partner in electrical safety. "With our advanced surge protection solutions, you can rest assured that your systems will be shielded from unpredictable power surges."

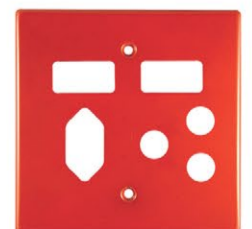
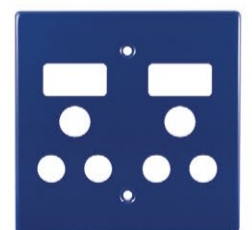
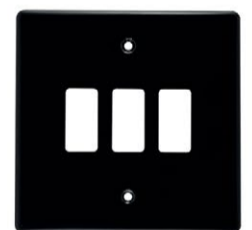
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## Boosting productivity in the mining industry

ABB has launched a new suite of service offerings designed to simplify maintenance and improve the operational health of crucial mining assets. This extends ABB's comprehensive ABB Care programme to mining automation and hoisting, unifying its mining and technology expertise to help customers continuously evolve their approach to maintenance.

Today, the mining industry is under immense pressure to meet production demands while navigating a complex landscape of rising costs, talent shortages and the urgency to meet sustainability commitments. With productivity as one of the top priorities on every major mining organisation's agenda, minimising downtime is crucial. Traditional approaches to maintenance often rely on reacting to issues after they occur, whereas shifting to a proactive approach prevents availability loss and enhances the overall efficiency and longevity of systems.

This was recently reinforced by the findings from ABB's World Class Maintenance Standard for mine hoists study. Customers with proactive maintenance strategies had, on average, 15% higher availability of their hoists than those primarily using reactive maintenance.

ABB's Care framework offers proactive and preventive services that ensure operations run smoothly and efficiently. It is a robust, standardised service framework built around ABB's advanced services and digital technologies. Users will benefit from optimised performance, maximised availability, reduced unplanned maintenance and downtime, improved safety and overall savings on maintenance costs.

With ABB Care for Mining Automation, customers can access a customisable set of services to select the components that best fit their needs. These services cover

everything from alarm management and cybersecurity to lifecycle management and loop performance.

"We know that every mine is different and that's why we've created ABB Care for Mining Automation, so that our customers can choose the right service solutions for them," said Max Luedtke, global business line manager for mining, ABB Process Industries.

"ABB delivered its first automation system for a mine in 1975. With over 1,200 control systems delivered today, shaped by partnerships with some of the world's largest mining organisations, we use the best of automation technology and our industry expertise to bring performance-enhancing service solutions to our customers," according to Luedtke.

ABB Care for Hoisting offers tiered service plans, designed to address challenges across every element of the hoist system from the powertrain to the brake systems. As standard, every plan includes remote support, guaranteed response times, annual inspections and a maintenance time bank.

"Mine hoist systems are at the very heart of many mining operations around the world," said Björn Jonsson, global business line manager for hoisting, ABB Process Industries. "They offer the most efficient way to transport heavy loads of ore from the depths and must therefore operate at the highest possible levels of reliability and productivity. ABB Care for Hoisting provides customers with a solution to swiftly adopt a predictive maintenance approach, enabling them to reach to world-class maintenance standard established by ABB, and keep these crucial components operating with minimal availability loss."

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



## EM celebrates 40 years of service and innovation with new catalogue

To commemorate its 40th anniversary and the launch of its 2025/26 catalogue, ElectroMechanica (EM) hosted customer events across the country in October. The anniversary edition catalogue boasts more than 1,100 new products and signals the start of a new era for the company.

Customer events took place from 14-17 October in Johannesburg, Cape Town, and Durban, with two days of events at the Bloemfontein, Gqeberha, and Nelspruit branches. Throughout these days, customers, partners, and media were invited to the EM branches to receive their catalogues and learn more about the new products.

### Not just another catalogue

The first EM catalogue was published in 1984. It was only around 40 pages long and featured six or so partners. In 2024, the 21st edition of the highly sought-after catalogue features around 50 partners among the 496 pages. In total, it features 11,500+ products.

What makes the new catalogue so special is that it's completely interactive, with dynamic QR codes and micro QR codes added to create additional value for customers. These codes navigate to product demonstrations, tutorials, and first-hand experiences of the products. This will help empower customers to find the right solution for them.

The new catalogue is an homage to the original edition, featuring a clean and simple logo on the cover. "The EM 40th anniversary logo is a tribute to where it all

began, blending elements of the original EM logo with the company's modern identity," explains Pravin Govender, product marketing manager at EM. "We're going back to the basics, reaffirming our commitment to customer service, which remains at the heart of everything we do."

The entire catalogue, except the printing, was done in-house by the EM team. EM expects to distribute around 30,000 copies over the next two years.

### What's new

EM has partners around the world, allowing it to offer a cutting-edge product selection that is up to a world-class standard – something it prides itself on.

Over the years, EM has improved its data collection and analysis, which has allowed it to update its product offering to meet industry trends and customer demands. The new catalogue's product selection reflects this. Various new products were included based on feedback from customers and partners.

New categories of products have been added this year, including a range of electric motors through its partnership with Techtop. Previously, EM only had control and safety products, but now it has a complete motor offering. "We always wanted to close that loop, and now we've found the right partner to do so," said Govender.

The second new category of products included in this year's catalogue is monitoring and control, where software solutions were added with the help of



Dave van den Berg, chairman and founder of EM, at the Johannesburg launch.

partner Polar Monitoring. Working with Delta, new SCADA system offerings were added, too. EM has boosted its engineering portfolio to support customers in selecting the right software solution.

Its automation selection has also been upgraded as EM moves away from Gen-2 solutions and expands its Delta range.

"The first 40 years were built on hardware, and now we've added software to complement that as we look to the next 40 years," said Govender.

EM has also included more commercial PV solutions to its portfolio, like two-way switches, based on the growing demand it has noticed over the past 18 months.

### Looking to the future

"It's taken us 40 years of great relationships and amazing stock levels to take the company to where it is today," said Govender. Now, EM wants to build on this foundation by adapting to a changing industry – locally and abroad – and taking the company to the next level. "We are marrying the strength of the past with technology changes of the future."

"We're excited, we're proud, and we look forward to the next 40 years ahead," Govender concluded.

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

## Voltex at PURCO 2024: Bridging connections for higher education

In September, Voltex participated in the 2024 PURCO SA annual conference and exhibition hosted at the CTICC in Cape Town. Voltex's National Tenders and Contracts Department recognised this event as an invaluable opportunity to engage with universities and colleges across Southern Africa. With over 39,000 visitors and 500 exhibitors, the conference provided a bustling atmosphere for networking and collaboration.

### The importance of PURCO

PURCO SA, the purchasing consortium for the higher education sector, has established itself as a crucial platform for connecting educational institutions with suppliers. Over the years, it has grown significantly, attracting a diverse array of attendees from various sectors within universities and colleges.

"This year was no exception, as we witnessed a remarkable turnout, even in the face of inclement weather," said Voltex. "The rain and cold could not dampen the spirits of those eager to explore new opportunities and make connections."

"At Voltex, our aim was clear: we wanted to enhance

awareness of our products and services, understand the unique needs of educational institutions, and identify avenues for collaboration. The event allowed us to engage directly with key decision-makers, fostering relationships that will benefit both our organisation and the universities we serve."

### Engaging with attendees

One of the standout aspects of this year's exhibition was the level of engagement from attendees, according to Voltex. Visitors were eager to explore its offerings and share their own needs and challenges. This open dialogue gave Voltex valuable insights into how it can better serve the higher education sector.

"Our well-presented and colourful stand played a significant role in attracting interest. Its vibrant design, combined with strategically positioned catalogues and a multimedia display, facilitated meaningful interactions. Attendees were drawn to our products, and many took the time to ask questions about our extensive range of electrical solutions."

Additionally, Voltex team member Devashini Reddy (national tenders manager) was a familiar face to many returning attendees. "The relationships she had built in previous years proved advantageous, as we were able to dive straight into discussions about how we could further meet their needs," said Voltex.

### The power of networking

Networking is at the heart of the PURCO exhibition, and this year did not disappoint. Voltex had the opportunity to connect with a dedicated audience of professionals and buyers actively seeking innovative electrical solutions. These interactions often go beyond mere introductions; they lay the groundwork for long-term collaborations.

Throughout the three days, the team engaged with numerous new contacts, each presenting unique partnership opportunities. "The feedback we received face-to-face was invaluable, offering us direct insights into our current product offerings and how they align with the evolving needs of the sector."

Voltex's participation in the conference resulted in a significant number of high-quality leads, and they were able to establish connections with key stakeholders from various educational institutions. "This will not only help us to grow as a company but also ensure that we remain attuned to the needs of our clients."

### A bright future ahead

"Reflecting on our experience at PURCO 2024, we are filled with optimism about the future. The connections we forged during the exhibition will be instrumental in driving our efforts to support the higher education sector. As we continue to engage with universities and colleges, we are excited to explore new business opportunities and adapt our offerings to meet their needs," said Reddy.

The feedback Voltex received has already initiated discussions about potential collaborations, and the team is eager to pursue these leads. "Our commitment to innovation and customer satisfaction remains unwavering, and we look forward to enhancing our product offerings in response to the insights we gained during the conference," the company said.

### A successful event

The 2024 PURCO conference and exhibition was a resounding success for Voltex. "We are grateful for the opportunity to connect with so many dedicated professionals from the higher education sector. The event reaffirmed our commitment to supporting universities and colleges in their pursuit of excellence," it said.

"As we move forward, we are excited to leverage the relationships we've built and to continue engaging with the educational community. We believe that collaboration is key to driving innovation, and we are committed to being a reliable partner for our clients."

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





## The economic link between OT and IT

The convergence of operation technology (OT) and information technology (IT) is delivering significant benefits for many companies, especially in energy management. Corporate IT teams are increasingly processing information gathered on the operational level to make better, future-proof decisions. This makes the easy, efficient, and secure data exchange more important than ever.

### Reducing complexity

One goal of the ongoing efforts to digitalise equipment of all kinds is to process more of the obtained operating and condition data in higher-level systems. To do this, the connected devices need to have their own IP addresses, while the in-house communication networks are becoming more complex. At the same time, operating and administering the devices require monetary and personnel investments, especially in the IT department.

It's crucial to make the exchange of data secure to ensure cybersecurity within the company. After all, the data comes directly from systems that are indispensable to in-house processes.

Manipulations, malfunctions, or even outages would have massive consequences. Permanently defined transitions between IT and OT, limited access to devices, firewalls, and device hardening are only a few of many measures that need to be taken.

SENTRON Powercenter 3000 (from Siemens) greatly supports and simplifies the ability to achieve and implement these measures.

### Cutting costs

The costs of connecting the devices and maintaining the network are usually passed on or billed externally by service providers. Equally relevant factors are the amount of time invested in these administrative activities and the resources committed by highly qualified specialists in the company's own IT departments.

However, both can be influenced in a targeted manner with SENTRON Powercenter 3000 from the SENTRON Digital ecosystem. It acts like a data concentrator for a large number of individual devices and sensors, which are connected to SENTRON Powercenter 3000 and administered in a separate subnetwork.

From a networking perspective, however, only one device is visible within the corporate network, namely SENTRON Powercenter 3000. All connected devices are viewed collectively via this node. The IT departments only have to administer a single device instead of dealing with a large number of individual units. This not only relieves the team of burdensome routine tasks and reduces the number of valuable IT addresses to be assigned, it also frees up crucial human resources for other important tasks.

### Improving security

The compact SENTRON Powercenter 3000 fits into any control cabinet, where it acts as a central IoT data interface with the ability to collect data from as many as 212 devices and forward it to a single IP address. The advantage is clear: SENTRON Powercenter 3000 reduces the target area for cyber-attacks and acts as a prepared single point of entry, protected by a variety

of cybersecurity functions.

### Making transparent power distribution easy and secure

With SENTRON Powercenter 3000, you can maintain an overview of the energy and condition data of your low-voltage power distribution system via web-enabled terminal devices in the local corporate network as well as archive and export this

data for energy reports. As an IoT data platform, SENTRON Powercenter 3000 makes it easy to establish a company energy monitoring system for your low-voltage power distribution needs or create an energy management system, for example according to ISO 50001.

Enquiries: <https://siemens.com/sentron-digital> or [lvswitchgear.za@siemens.com](mailto:lvswitchgear.za@siemens.com)



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## DesignSpark helps engineering professionals succeed

From streamlined project management tools to a vibrant community platform, DesignSpark from RS South Africa empowers engineers of all skill levels to innovate, collaborate, and succeed. The comprehensive suite of resources and solutions is tailored to meet the diverse needs of professionals across industries.

It comprises a global community for students, pro-creators, and professional design engineers founded in 2010. With 1.4 million members across 193 countries, it provides various design resources. These include DesignSpark Mechanical, PCB and Circuit Simulator professional design CAD software, and SolidWorks Electrical through an affiliate partner.

A wealth of skills and learning materials are available, including tips, video tutorials, user guides, and grassroots education. It features extensive 2-D and 3-D CAD part libraries and a Product Design Centre, offering parts intelligence on a billion MPN part information, including compliance export, lifecycle, and alternatives.

"DesignSpark promotes responsible

engineering and societal change through its Mission Responsible and Activist Engineering programmes," explained Wesley Hood, education and social impact specialist at RS South Africa. It calls on engineers to engage in projects like the Environmental Sensor Development Kit, an open-source project developed by DesignSpark.

DesignSpark supports small SMEs and OEM companies with larger design teams across all industries, including healthcare, utilities, energy, communications, pharmaceutical, education, aerospace, defence, infrastructure, maintenance, and F&B.

Tools like DesignSpark PCB allow engineers to create schematics and layouts for electronic circuits with extensive libraries and a high degree of customisation. DesignSpark Mechanical is a 3-D CAD software that enables engineers to design mechanical components and assemblies, making it easy to use for quick prototyping and detailed design work.

The tools integrate well with other

industry-standard software and services, making DesignSpark a valuable platform for engineers at all stages of their careers.

"OEMs are using DesignSpark as a supporting tool chain for proof-of-concept designs, rapid prototyping, and R&D tools. Start-ups and SMEs use DesignSpark as a primary tool chain for proof of concept and end design, and as a knowledge-sharing platform," said Hood.

Universities and students also leverage the platform for resources, design activities, and reputation building. Engineers can access comprehensive tutorials, webinars, FAQs, and technical news, helping to escalate the design process and boost productivity.

DesignSpark boasts one of the largest global communities in this sector. "It offers members the opportunity to share ideas, projects, and solutions. They can ask questions of their peers through forums to gain expert help and project inspiration from application-based projects and content."

Members also have access to premium



content from leading suppliers and experts, such as the 'Ask the Expert' video series, providing the latest tech trends and product innovations from leading suppliers.

"DesignSpark continues to revolutionise engineering by providing cutting-edge tools, a supportive community, and educational resources, ensuring engineers can innovate and succeed across various industries," concluded Hood.

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

## Mines need to adopt advanced digital technologies

As the mining industry faces increasing pressure to enhance efficiency, safety and sustainability, adopting advanced digital technologies is no longer optional – it's imperative, explained Neels van der Walt, Iritron's head of department sales and business development.

Adopting smart mining tools and supply chain digitisation can help companies monitor asset conditions, detect anomalies, and predict failures. This will protect assets' longevity and enhance their efficiency, Van der Walt noted when speaking at the recent SMART Mining Security Conference held in Johannesburg.

"Enabling real-time asset monitoring is expensive, which has slowed the adoption of these solutions. However, if companies leverage the power of Industrial Internet of Things (IIoT) technologies, they can proactively monitor the condition of their valuable assets, even in remote areas," said Van der Walt.

There are multiple benefits of online condition-based monitoring by leveraging IIoT technology. "In our experience, we have seen the prediction of equipment failure, which has led to avoiding unplanned breakdowns and downtime," he said.

Van der Walt added that this also enables longer service intervals by moving from time-based to usage-based scheduled maintenance, while companies can also save energy by monitoring equipment health, including power consumption and detecting power consumption anomalies.

One tool that is driving digital supply chain transformation is Message Queuing Telemetry Transport (MQTT), a lightweight, secure messaging protocol that is changing how mining operations manage data and communications across their value chains.

One of the standout features of MQTT, Van der Walt highlighted, is its ability to handle vast amounts of data efficiently. "MQTT was designed for low-bandwidth and high latency networks allowing a single server to process and transmit one million messages in a second with a millisecond level of latency."

At the centre of the solution is an industrial information platform that can receive data from multiple remote edge instances, making it available to multiple applications and users. "This capability is crucial for mining operations that rely on timely data for monitoring equipment health, optimising processes, and ensuring safety," he explained.

"Embracing technologies like MQTT will be essential for staying competitive in a rapidly evolving landscape," Van der Walt concluded.

Enquiries: <https://iritron.co.za>

## Renewable energy: SA's tech infrastructure solution

South Africa's unreliable grid threatens its AI ambitions as data centres grapple with loadshedding and surging energy needs. Yet, this crisis offers an opportunity: strategically placing AI facilities near renewable sources could secure power and position the country as a sustainable tech leader, according to Mandy Hattingh, senior associate at NSDV.

South Africa's power grid isn't winning any awards for reliability. Our data centres are feeling the heat – and not in a good way. These digital powerhouses not only keep our online world spinning but are also fuelling the recent AI revolution – yet their ever-expanding capabilities hinge on one critical requirement: an uninterrupted power supply.

Renewable energy has emerged as a promising solution to this pressing issue. By harnessing abundant solar and wind resources, coupled with battery storage to account for intermittency, South Africa could secure a stable energy supply for its data centres. This approach addresses the immediate need for reliable power and aligns with national and global efforts towards sustainability.

The global appetite for digital services is driving unprecedented demand for data centre capacity, with significant implications for energy consumption. As highlighted by the International Energy Agency in its 2024 Electricity Report, data centres, AI, and cryptocurrencies accounted for 2% of global power generated in 2023. This figure is expected to more than double year-on-year until 2026, with some researchers considering even this estimate conservative.

To put this into perspective, a single query to ChatGPT uses approximately as much electricity as it takes to power a light bulb for 20 minutes – about ten times the energy of a standard Google search. As AI becomes more sophisticated, its energy demands increase correspondingly.

### The local challenge

South Africa's situation is particularly challenging. The country battles with an Energy Availability Factor hovering around 70%, significantly better than Nigeria's 35% but still far from ideal. Loadshedding has become a daily reality, affecting not just individuals and businesses but also hampering the country's ability to attract and maintain data centres crucial for economic growth and technological advancement.

However, this challenge presents a unique opportunity. Unlike traditional data centres that require proximity to urban centres for low-latency services, AI data centres have more flexibility in their location. They

can be strategically positioned closer to renewable energy sources like solar or wind farms, often in more remote areas. This proximity can significantly reduce the need for long-distance power transmission, which often results in energy losses and increased costs.

By adopting this approach, South Africa could not only address its data centre power needs but also contribute to broader energy access goals. For instance, excess capacity from these renewable-powered data centres could be shared with local grids, benefiting nearby communities.

Recent developments in South Africa show promise in this direction. The publication of exclusion norms for solar PV and battery facilities from certain environmental authorisation requirements under the National Environmental Management Act (1998), is a step towards streamlining the development of renewable energy projects. Additionally, amendments to the Electricity Regulation Act (2006) have made it easier for some projects to avoid licensing requirements from the National Energy Regulator of South Africa.

However, the country has also seen some setbacks. The 2023 tax break for solar panel installations, which contributed to a 349% surge in rooftop solar capacity between March and June 2023, was not renewed for the 2024/25 financial year. Moreover, a recent 10% tariff on imported solar panels, while aimed at boosting local manufacturing, may inadvertently discourage investment in solar infrastructure due to increased costs and limited local supply.

Novel solutions like floating solar installations, which have shown promise in countries like Ghana, Rwanda, and Ethiopia, could also be explored in South Africa. These installations can generate significant portions of national energy demand while utilising existing water bodies. These installations could be implemented in man-made reservoirs and dams, thereby preserving the natural environment.

As South Africa aims to position itself at the forefront of the AI revolution and reap the benefits of this expanding industry, it must take decisive steps to incentivise the development of data centres powered by renewable energy. This approach addresses the immediate power needs of data centres and contributes to the country's broader energy security and sustainability goals.

By leveraging its abundant renewable resources and implementing supportive policies, South Africa can transform its current energy challenges into opportunities.

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



## WEG boosts local manufacturing capabilities

To improve its local manufacturing processes, WEG has taken delivery of two laser cutting machines and three bending machines. Deployed at the sheet metal cutting operation at the company's manufacturing facility in Robertsham, Johannesburg, the state-of-the-art machines have significantly increased productivity and efficiency, reducing internal delivery times and, ultimately, customer lead times.

In recent years, WEG has continuously bolstered its capacity across its various manufacturing facilities in South Africa. The Robertsham factory – a facility that largely specialises in the production of medium voltage switchgear, Motor Control Centres (MCCs), medium voltage softstarters, low voltage Variable Speed Drives (VSDs) and softstarter enclosures – is the latest to benefit from a significant capital investment in new manufacturing technology.

Previously the facility operated two conventional punching machines, which have been replaced by two fibre laser cutting machines – 3 kW and 4 kW units, explained Anderson Kohler, general manager at WEG Africa. "The decision was made to replace the old punching machines, addressing previous challenges such as breakdowns and quality issues. Previously, we experienced less than 50% availability, leading to production downtime," said Kohler.

The new fibre laser cutting machines have revolutionised manufacturing processes with their unmatched precision accuracy. The speed at which these machines cut metal is about 50% faster than punching, while the precise slitting ensures that cut surfaces have no rough edges, increasing product quality and reducing waste based on the best use of raw materials.

"Our machine availability is now between 95% and 99%, up from the previous 50% on the old machines," said Arno Broodryk, mechanical supervisor at WEG Africa.

Fibre laser technology eliminates the need for setup and tooling time due to the absence of physical tooling, added Kohler. These efficiencies mean that more time is spent on actual production, resulting in tremendously swift internal delivery times and reduced customer lead times.

In addition, WEG has replaced its two old bending machines with three modern units. "Again, the productivity of the new bending technology is unmatched and the quality is outstanding. Previously, we had to set up the bends manually, but the programming software on the new bending machines reduces the need for human intervention," explained Broodryk.

As WEG continues to expand the range of WEG products manufactured locally, the new top-of-the-line bending technology and laser cutting machines offer new capabilities, allowing for seamless addition of new product lines to the sheet metal factory.

"The next step in our investment strategy is the acquisition of a new copper busbar punching machine, which is expected to arrive this year," concluded Kohler. "Continuous improvement is the name of the game. The idea is to be better today than yesterday, with the ultimate goal to become even better tomorrow."



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## New ways of financing energy-efficient lighting

The higher initial costs of energy-efficient lighting have always been the major roadblock to its widespread implementation. Pay-back period is usually the main financial parameter for deciding whether or not to implement a specific lighting solution.

For larger projects, the Net Present Value (NPV) is preferred as it considers:

- The lifetime of the equipment;
- The risk of the investment; and
- When the energy savings will be delivered.

Both pay-back period and NPV apply in the case of a regular transaction where the lighting supplier sells the energy-efficient products to the end-user, who then owns the products and has to pay for the electricity used and its maintenance. However, there are alternative concepts that offer the key benefit of completely removing the initial investment.

### These two models are:

- Energy Performance Contracting (EPC); and
  - As-a-service models, such as Efficiency-as-a-Service (EaaS) and Lighting-as-a-Service (LaaS).
- Both models offer common benefits, such as no up-front investment for the end-user and systems being optimised to maximise efficiency. However, some of their features are fundamentally different, the major one being how energy savings are treated.

## Professional meter for PV installations up to 1,500 V

Action Instruments is pioneering its PVM-1530, a comprehensive solution that is simple to use. The meter is ideal for monitoring the safety and efficiency parameters of photovoltaic (PV) installations.

The PVM-1530 can be used for category 1 measurements according to IEC 62446-1. It also allows the measurement of the I-U curve for category 2 according to IEC 62446-1. Furthermore, the meter also converts measured parameters into STC conditions according to IEC 60891.

### Features include:

- Ability to define measurement procedures;
- Converts measured parameters into STC conditions according to IEC 60891 in conjunction with the IRM-1 solar radiation and temperature meter;
- reSYNC function – automatic completion of results with environmental parameters and their conversion to STC conditions after restoring connection with IRM-1;
- Attachable radio interface used with the IRM-1 meter over long distances;
- Built-in Bluetooth and Wi-Fi for communication with external devices;
- Large memory of measurements; and
- Large touchscreen for good visibility in bright sunlight.

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



LaaS does not tie payments to energy savings. Payments are agreed in advance based on actual usage, including operating costs such as electricity. Thus, the customer has

a clear guarantee that they will not pay more per unit of energy efficiency service than agreed, even if the electricity consumption is higher than expected.

EPC payments, on the other hand, are dependent on energy savings. There are two major forms of EPC models:

1. The shared savings model whereby the customer does not invest but instead pays a share of the energy cost savings to the project developer; and
2. The guaranteed savings model whereby the customer invests but is guaranteed that a certain amount of energy savings will be met.

### Comparing the options

Both EPC and LaaS turn capital expenditure (CAPEX) into operational expenditure (OPEX). One of the characteristics of EPC and LaaS is that the lighting equipment remains the property of the lighting supplier. After the agreed period (e.g. ten years), the equipment can be returned, or the contract can be extended – in which case the equipment often gets refurbished, and the LEDs are replaced with more efficient ones.

An essential benefit for the lighting supplier is that EPC and LaaS create recurring revenues instead of the peaks and troughs of the regular project business.

EPC and LaaS can really serve as accelerators for energy-efficient lighting, not only by eliminating the higher initial investment, but the model also favours the use of the most efficient products and lighting controls, as the higher costs of these products are offset by the higher level of savings.

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

## Upskilling mining employees to capitalise on solar

Mines must ensure a reliable power supply while minimising environmental impact. Solar energy presents a solution but demands a skilled workforce to realise its full potential, explains Jacques Farmer of Prisma Training Solutions.

### A power-hungry industry

Mining operations are notoriously energy-intensive, demanding consistent power for a variety of processes. From powering heavy machinery like excavators and crushers to operating ventilation systems and pumps in underground mines, electricity is the lifeblood of these operations. Historically, the industry has relied heavily on the national grid, often facing challenges related to power outages, loadshedding, and fluctuating electricity costs.

While recent economic headwinds have temporarily reduced industrial activity, including mining, easing the pressure on the national grid, this is a short-term reprieve. As the global economy rebounds and the demand for minerals increases, so too will the mining sector's energy consumption, which is roughly 30% of Eskom's annual power supply, according to Minerals Council South Africa.

### Power of solar for mining

To ensure uninterrupted operations and mitigate risks associated with grid instability, mining companies are increasingly turning to on-site power generation. Solar energy is a compelling solution to power challenges due to its sustainability and growing cost-competitiveness.

By installing large-scale solar panel farms on mine sites, companies can generate clean electricity directly where it is needed, reducing their dependence on the grid. This not only helps to stabilise energy costs but also provides a hedge against future tariff increases. Moreover, solar power generation aligns with the global shift towards renewable energy sources, enabling mining companies to improve their environmental performance and reduce their carbon footprint.

Beyond cost savings and environmental benefits, solar power can enhance operational efficiency. For remote mine sites with limited grid access, solar energy can provide a reliable and cost-effective power source. Additionally, by generating electricity on-site, mining companies can reduce transmission losses, further optimising energy utilisation.

### Building a skilled solar workforce

The successful integration of solar power into mining operations hinges on a skilled workforce capable of handling every stage of the solar energy lifecycle, which necessitates a significant investment in human capital

development. A critical component of building a skilled solar workforce is the establishment of formal qualifications. Here, the introduction of a general technician qualification for solar installation is a vital step in ensuring that individuals possess the necessary knowledge and skills to work safely and efficiently.

By standardising training and certification, the industry can enhance quality, safety, and professionalism. A qualified workforce not only benefits the employees themselves but also instils confidence in clients and stakeholders. It demonstrates a commitment to quality and adherence to industry best practices.

### Targeted upskilling and reskilling

To address the specific needs of the mining sector, targeted upskilling and reskilling programmes are essential. By leveraging existing mine technician skills and combining them with solar technology training, the industry can create a highly competent workforce.

Additionally, the integration of solar technician training into social labour plans by mining houses provides an opportunity to empower local communities. By training community members as solar technicians, mining companies can contribute to local economic development and create sustainable employment opportunities.

As an example, the Exxaro project, which involves the development of a 60-hectare solar plant, offers a model for community engagement. By training local residents as solar technicians, the project not only supports the mine's renewable energy goals but also uplifts the community.

Targeted training programmes, in partnership with the Energy & Water SETA, provide the necessary skills and qualifications for individuals to excel in the solar industry. By creating a clear career path, these programmes foster a skilled workforce capable of designing, installing, and maintaining solar power plants.

### A brighter future through solar power

As South Africa works towards a low-carbon economy, the mining industry has an opportunity to lead the way in renewable energy adoption. By investing in upskilling and reskilling programmes, the sector can secure its energy needs, create jobs, and contribute to a more sustainable future. The transition to solar power presents both challenges and opportunities, but with the right skills and support, the mining industry can successfully harness the power of the sun.

Enquiries: <https://prisma.co.za>

## Predictive maintenance is essential for energy efficiency

Comtest has been hosting multiple training sessions to educate its customers on key topics like how to get the most out of predictive maintenance testing equipment. How can analyser tools help improve energy efficiency, and how is Comtest empowering its customers to get the most out of their tools?

### Training matters

In October, Comtest hosted multiple training sessions at its office in Johannesburg to help customers improve their technical know-how. Some courses, like the Earth Ground Testing of 15 October, offered CPD points, while others, like the Fluke Industrial Imaging course on 16 October, focused on improving product knowledge.

Comtest hosts training courses and technology days nationwide at its customers' premises, and the team plans to ramp up its training offering in 2025. "We pride ourselves on going the extra mile for our customers and adding value with the training and knowledge transfer," said Barend Niemand, managing director of Comtest.

### Industrial imaging

The Industrial Imaging training session examined different sound and thermal imaging options and their benefits and uses. It was hosted by Gerrit Barnard, technical sales manager at Comtest, who has been with the company for 16 years and knows the Fluke products inside out.

During the talk, Barnard also conducted various practical product demonstrations

to show the different tools and how they work. He stressed the importance of always ensuring that the model selected is fit for purpose, as not all imaging devices were built for the same applications or requirements.

If used correctly, Comtest's Fluke equipment can save a lot of money by focusing on preventative maintenance and reducing unnecessary, preventable breakdowns and downtime.

### Fluke now more affordable

When it comes to Fluke products, Comtest has been the sole importer and distributor of this brand since the company's inception in 2005, with its in-house knowledge dating back to the 1980s – truly making them the local experts on the product.

Excitingly, Niemand notes that Fluke products are now more affordable thanks to the price reduction that came into effect in mid-September. "We hope this will encourage customers to act quicker to get a predictive maintenance programme in place," he said.

### Improving energy efficiency

Many of Comtest's products focus on predictive maintenance, helping users identify weaknesses early before they become larger problems. Its imaging products from Fluke save operators time and reduce the time needed for problem-solving. Additionally, the faults can be detected while systems are still running, minimising downtime – a significant benefit.

Energy efficiency is often misunderstood as solely relating to power consumption.

However, this overlooks the crucial element of power quality, which is equally important. Fluke analysers can monitor both aspects.

In most installations, electrical motors consume approximately 80% of power. These motors require specific voltages to function properly. Inconsistent power quality can significantly impact efficiency. For example, excessively high voltage causes motors to use more power (Amps) and risk burnout. Conversely, low voltage leads to increased power draw and energy consumption.

Predictive maintenance equipment, such as that offered by Fluke, ensures balanced energy use and aligned energy levels. Misaligned levels cause motors to work harder, reducing efficiency. Balancing phases in a factory can decrease energy peaks, ultimately lowering utility bills.

Monitoring equipment allows for better management of wear and tear. Production needn't halt to replace components that may not yet be critical. By tracking data, trends, and usage, the equipment can be utilised to its full potential.

Thermal imaging is another useful tool for improving efficiency. It quickly detects heat losses, reducing unplanned downtime and lowering costs while increasing productivity.

In solar installations, measuring required power is crucial yet often overlooked. This oversight frequently results in incorrectly sized installations, leading to improper function or inefficiency. A power logger can quickly address this issue, ensuring the

correct installation size is specified.

### Growing the team

Comtest is expanding its technical team to further support its customers. Tyron Kotze joined the team on 15 October in the Cape Town office as area sales manager. And in Johannesburg, Gareth Smith will officially join the team on 1 November as technical sales support.

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



Barend Niemand, managing director (left), with Gerrit Barnard, technical sales manager, during the Industrial Imaging training.

## 100% renewable electricity in manufacturing is possible

Epson is working to popularise the use of renewable electricity in manufacturing despite unavoidable short-term cost increases. What are they doing, and how can these lessons be applied to other manufacturing companies?

### A sizeable challenge

Manufacturing and other industrial users account for around one-third of the world's energy consumption, according to the International Energy Agency. Electricity is a central element of that. If all the power consumed by factories and industrial plants came from renewable sources, it would make a sizeable contribution to tackling climate change.

It's a challenging goal that more and more companies are committing to. The RE100 initiative, for example, has seen more than 400 corporations commit to using 100% renewable electricity across their operations. How they reach that goal will depend on many factors, including what they are making and where.

### Switching to renewable electricity

"Organisations with lighter electricity needs and stable finances will be best positioned to transition to renewables. Companies with high electricity demand, like furnaces for

glass, smelting, or other large-scale heating applications, and companies with large footprints – such as expansive warehouses and assembly operations – may have more difficulty," explained Paul Holdredge, director for industrials and transport at consultancy Business for Social Responsibility (BSR).

The prospect of switching to renewable electricity has become far easier due to recent dramatic cost reductions. According to the International Renewable Energy Agency (IRENA), the price of solar photovoltaic power in 2010 was typically 710% higher than the cheapest fossil fuel, but by 2022 it was 29% cheaper. Currently, electricity accounts for around 20% of final energy use in manufacturing, according to IRENA, and this is expected to increase.

### The manufacturing challenge

It is not just the price of renewable energy that dictates a manufacturer's ability to move to 100% renewable energy. The required initial capital investment and first-mover disadvantage – where it costs pioneers more than those that follow them to deploy new technologies – can significantly slow down a fully renewable transition. Not to mention the lack of availability of certain renewables in certain geographies and the fact that the appropriate infrastructure must be in place for this energy to be delivered – something no one company can do on its own.

Manufacturing requires an enormous amount of electricity in comparison to powering offices.

Despite the challenges and costs, Epson is advancing investment in sustainability to enrich communities and create social value by investing in future generations.

### Going local

Wherever they are in the world, with whatever types of renewable energy available to them, companies need to adapt to local, national, and global circumstances. Seiko Epson, based in Japan, has done just that. Having switched to 100% renewable electricity for all its sites in Japan in 2021, it completed the transition to renewable electricity globally by the end of 2023.

"We have used locally produced energy wherever

possible," says Junichi Watanabe, managing executive officer/general administrative manager of the Production Planning Division, whose role encompasses the promotion of Epson's procurement strategies in the supply chain, including the use of renewable electricity. "Rather than using energy generated in faraway countries, using a particular region's abundant renewable resources brings many benefits, such as improving energy self-sufficiency and creating jobs."

Among the practical methods companies should consider are:

- Generating electricity on-site: Via rooftop solar panels or, if space allows, wind turbines. Even if they do not generate all the power needed, they can still make a useful contribution.
- Develop battery storage facilities: A common concern about renewable electricity is the risk of supply being interrupted when the wind isn't blowing, or the sun isn't shining, but storage technology offers a viable way to address that.

When it comes to solar power generation systems, Epson's sites also decide whether to adopt a self-investment or power purchase agreement (PPA) based on the individual circumstances of each country or region. The solution will vary from company to company. But most manufacturers are likely to find that combining these elements will go a long way to reaching their renewable electricity goals.

### Future of greener manufacturing

Addressing climate change can improve the livelihood of many people. At the same time, manufacturing companies and their shareholders stand to gain commercially from adopting a proactive approach. Companies with greener credentials are increasingly likely to be rewarded by consumers and investors, making it a crucial aspect of long-term market positioning. Additionally, increased use of renewable energy sources and greater self-generation can enhance a company's ability to withstand fluctuating electricity prices in the open market.

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



## Local consumer demand for solar dropping: why?

Several factors have led to a decline in South Africans buying solar panels – primarily the lack of loadshedding during the past few months. What other trends are impacting solar power supply and demand?

According to Clive Hogarth, head of retail pricing at Old Mutual Insure, electricity tariff hikes could see consumers investigating solar power solutions again, emphasising the need to ensure buildings and contents are adequately insured. However, he noted that adding the “service and capacity” fees for prepaid customers means that some of the avenues for savings on consumers’ electricity bills have been reduced.

“The demand for residential and commercial solar has historically been driven by loadshedding. With the recent improvement in Eskom’s performance, demand has dropped. However, there are still many corporates that are installing solar – driven by their corporate social responsibility and cost-saving initiatives,” said Hogarth.

According to the National Energy Regulator of South Africa (NERSA)’s statistics, there is still an appetite for

solar for commercial customers.

“With the lower demand, the focus for many solar installers has now shifted to maintenance and addressing issues with existing systems, many of which were installed with varying degrees of quality,” explained Hogarth. “But the industry is facing challenges with some suppliers entering business rescue.”

He noted that several trends are impacting the solar and insurance market.

The Department of Trade, Industry, and Competition recently introduced a 10% tariff on imported panels in a bid to support the South African industry. In addition, the tax credit for installing solar panels producing more than 275 W of energy fell away at the end of February.

“However, we anticipate a range of factors that could lead to additional investments,” Hogarth added.

Legislative changes have generated more interest in wheeling electricity, which could increase corporate demand. However, there is still a lot of uncertainty, particularly with the objections Eskom has raised with NERSA. The regulation is currently open for commentary.

“Solar (and battery) backup systems do increase the risk of a policyholder to a degree. Despite the obvious theft risk, the high-voltage cabling and batteries pose a fire risk. Modern batteries use lithium-ion compounds, which are very safe – if installed correctly. Unfortunately, this is not always the case and there have been instances in which Old Mutual Insure has dealt with claims caused by fires because of poorly installed solar (and battery backup) systems.”

Consumers and business owners must ensure they are adequately insured, especially when investing in new forms of power.

“There is always a risk that someone will install solar, or a backup power system without having their buildings (or contents) revalued, which could leave them underinsured should they have a loss,” said Hogarth.

It’s essential to check with insurers to ensure that all the requisite safety requirements are met, typically including an updated certificate of compliance.

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

## Provest installs solar at its Steelpoort plant

The solar installation project was designed to improve power security at the plant, minimise production losses due to unplanned power outages, and significantly reduce the Steelpoort plant’s carbon footprint. The expected payback period is only 1.7 years.

In recent years, the Provest Group’s Steelpoort plant, like many others across South Africa, has faced ongoing challenges resulting from load shedding and unexpected power outages. In 2023, the plant experienced 120 hours of power outages, equivalent to 15 production days. This translated to approximately R4.5 million of lost revenue for the year.

In addition to the rising costs of electricity, the plant had to rely on rented diesel generators as an alternative source of energy to power its operations. The cumulative effect of load shedding and power outages meant that Steelpoort had to use 2,120 litres of fossil fuels to power its generators, which further contributed to the emissions of the plant. Last year alone, the plant consumed 56.545 MWh of coal-powered electricity, resulting in approximately 52.02 tons of CO<sub>2</sub> emissions.

### Return on investment

“Load shedding pushed us to explore alternative energy solutions,” said Martin Kubyane, plant manager at Provest Group. “Our reliance on diesel generators contributed to increased carbon emissions. However, we recognised that with a solar installation, we would be able to secure our power supply, reduce our dependence on the grid and ensure that we can continue to meet our production targets while also reducing our carbon emissions. As a responsible organisation, the business case was very clear for us.”

The solar project began in June 2023 when Provest appointed Pienaar & Erwee Engineers to support with a comprehensive energy consumption and cost analysis and report. Their report informed Provest’s business case, as



well as the design of the ultimate solar energy system. In March of this year, Provest started sourcing service providers and appointed Rolling Snow Ball Holdings.

The solar project consisted of the implementation of a 50 kWh system for its plant operations and a separate 30 kWh system for the office operations. In total, the system consists of 128 Canadian solar panels, a 50 kW Deye inverter, six 5 kW Luxpower inverters, ten 5.12 kWh HV Deye batteries, and six 5.12 kW stage 1 Volta batteries. The total capital investment was R1.5 million.

“Rolling Snow Ball was professional throughout the implementation and has provided us with significant after sales support. From start to finish, it took two weeks to install with a total of six weeks to optimise our environment,” said Kubyane.

“Though the installation team has worked on larger

projects in the past, they were very complimentary in saying that our installation was one of the best projects they have had the pleasure of working on, which I credit to how we ran the whole project,” said Kubyane. “We were well prepared before ground was broken and had taken every step to ensure that all health and safety compliance requirements were in place and all legislative requirements were met, which enabled an efficient and speedy installation.”

Rolling Snow Ball adhered to the highest quality standards and stayed within budget. The system is expected to have a payback period of just 1.7 years, a significant improvement compared to the industry average of up to nine years.

“The successful implementation of this solar project is set to save Provest more than R50,000 per month on generator hire, not including the cost of diesel itself, and offset the risk of loss of production due to unexpected power outages. Furthermore, the move to solar energy will prevent an estimated 52.02 tonnes of carbon emissions annually, reflecting Provest’s commitment to reducing its environmental impact,” said Kubyane.

### Committing to sustainability

The solar installations at its Steelpoort plant enabled Provest to demonstrate the Group’s commitment to driving operational efficiency and sustainability in everything it does.

“This project is a testament to our values of Care, Professionalism, Reliability, and Innovation. By embracing solar energy, we are not only securing the future success of our business but also demonstrating our commitment to the environment and contributing to a sustainable future,” said Funani Mojono, chief executive officer of Provest Group.

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

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## New high-power density lithium battery cabinets for data centres

To meet the urgent need for solutions supporting high-density computing in increasingly crowded data centre facilities, Vertiv introduced its EnergyCore battery cabinets. These cabinets save floorspace with internally integrated accessories and seamlessly integrate with the brand's large and medium uninterruptible power supply systems (UPSs).

Factory assembled with Lithium-Iron-Phosphate (LFP) battery modules and Vertiv's internally-powered battery management system, Vertiv EnergyCore cabinets are available globally and are qualified for use with most current and legacy three-phase Vertiv UPS systems, including the recently launched Vertiv Trinerigy.

Vertiv EnergyCore cabinets are optimised for five minutes of end-of-life runtime at 263 kiloWatt per compact, 24" wide (600 mm) cabinet. They operate across a wide temperature range, making them suitable for high-density environments.

Lithium batteries are more compact and lighter than VRLA alternatives, allowing users to deploy fewer battery cabinets in most applications. An

internal two-hole lug eliminates the need for a conduit box, and the cabinets require no on-site external control wiring, reducing deployment time and cost compared to traditional on-site assembly.

The cabinets are equipped with Vertiv's intuitive interactive touchscreen HMI display to provide visibility and control of the cabinet, operating system, and installed batteries.

The integrated battery management system is powered by the Vertiv EnergyCore batteries, removing the requirement for an external power source and simplifying installation. It provides lifetime onboard data storage, tracking performance over battery charge-discharge cycles, service events, and enabling accurate state-of-health reports that can be used for warranty support and predictive analytics. Remote battery monitoring is available via Vertiv's Alber Battery Xplorer Enterprise.

"The proliferation of artificial intelligence and other high-performance computing applications is putting a premium on the ability to deliver more power in smaller, hotter spaces," said Milind Paranjape, vice president of

energy storage at Vertiv. "With our Vertiv EnergyCore battery cabinets, we are delivering exactly what our customers and our industry need – compact, high-power energy storage capable of operating safely and optimally. Simply put, these battery cabinets are designed for the emerging mission-critical needs of high-density computing environments."

The modular design of Vertiv's Trinerigy allows each UPS core to be paired with dedicated Vertiv EnergyCore battery cabinets in a distributed architecture, enabling uninterrupted service for critical applications. Due to the power density of the Vertiv EnergyCore design, only two lithium-ion battery cabinets are needed to support each 500 kW Trinerigy UPS core (versus the three cabinets that are required by most suppliers).

Vertiv EnergyCore is UL 1973 listed and has been successfully tested for compliance with the UL 9540A standard for protection against thermal runaway fire propagation in battery energy storage systems, which, according to NFPA 855 ESS installation standards, means the 92 cm spacing requirements between racks can be waived by the Authorities Having Jurisdiction. This can save space and speed deployment.

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



## How voltage fluctuations can damage your appliances

Reliable power supply is critical for the proper functioning of electrical appliances. Unfortunately, electrical supply issues such as low voltage, high voltage, power surges, and power outages are too common in many regions. These fluctuations in voltage can severely damage your appliances, leading to costly repairs or replacements, explains Nick Allen, general manager at Sollatek.

### High- and low-voltage damage

In some areas, homes and businesses experience sustained periods of high voltage, while in others, the voltage may be consistently low. Although these conditions are opposites, both pose significant threats to your appliances.

High voltage occurs when the power supplied is above the normal level (typically 220-240 V for many regions), causing overheating and stressing the

components of devices like refrigerators, televisions, and air conditioners. Prolonged exposure to high voltage can burn out wiring, damage circuits, and even lead to fires in extreme cases.

On the other hand, low voltage, while less immediately dangerous, is equally harmful over time. When the voltage drops below the normal threshold, appliances that need a certain amount of power to run efficiently will overcompensate, drawing more current to meet their operational requirements. This additional strain can cause motors to burn out, degrade components faster, and eventually lead to malfunction or permanent damage.

### The broader range of power problems

While many are familiar with power surges and spikes, these are not the only issues that cause electrical damage. A surge is a sudden increase in voltage, often caused by

lightning strikes or switching activities in the grid and can instantly damage sensitive electronics.

However, other power supply issues, such as power back surges (which occur when power is restored after an outage) and the loss of neutral (a disruption in the neutral wire that causes the voltage to fluctuate unpredictably), are also highly problematic. These can lead to erratic voltages in your appliances, further increasing the risk of damage.

### Protecting against voltage fluctuations

There are various solutions to protect against power problems. Stabilisers (regulators) stabilise fluctuating voltage, whereas automatic voltage switchers disconnect and protect when power fluctuates. Surge protection devices (SPD) protect against lightning surges and spikes. Uninterruptible power supply systems (UPSs) and inverters provide valuable stable power when there is none.

The Sollatek range offers these and

many more solutions to protect critical equipment. In areas where voltage problems are frequent, installing these protective devices is not just a luxury but a necessity to preserve the longevity of your electrical appliances.

### Sollatek's solutions

Sollatek is a world leader in voltage protection and power control. Its primary focus is protecting electrical and electronic equipment against unstable and unreliable voltage.

The Sollatek Voltshield range automatically prevents damage to electrical and electronic equipment/appliances from power fluctuations, specifically over and under voltage levels of long duration.

When the mains power supply fluctuates outside preset tolerances (say 190 V and 260 V), the switcher disconnects the power to the equipment. The switcher then monitors the voltage for a short period to ensure the power has stabilised before re-connecting. In addition, a start-up delay period provides protection against power-back surges commonly experienced after the resumption of power in a power-cut situation. Surge and spike protection are also incorporated to ensure protection.

Sollatek's Voltright range of voltage stabilisers and regulators is ideal for the most erratic power conditions. It will keep your equipment operating safely, no matter the voltage level.

The Sollatek SVS monitors the mains voltage continuously. If the voltage rises or drops, the SVS will stabilise the output to ensure the voltage reaching your equipment remains constant at 230 V ( $\pm 6\%$ ).

The Sollatek AVR is a state-of-the-art solid-state stabiliser. Using microprocessor technology, it rapidly detects voltage variations and corrects the output.

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

An automatic voltage switcher disconnects the load from damaging voltages and reconnects automatically when the supply returns within safe limits.

Solid-state voltage regulators stabilise power, keeping equipment running safely for longer by boosting low voltage and/or bucking over voltage.



## At 40, APC's UPS technology is more relevant than ever

This year, APC celebrates 40 years since introducing its first UPS in 1984 – a great milestone. Ben Selier, vice president of Secure Power, Anglophone Africa at Schneider Electric, takes us through the APC UPS journey over the years and shares three market trends driving the need for resilient IT infrastructure supported by UPS technology.

### From humble beginnings

The original UPS model, the 750, used a lead-acid battery to provide surge protection and backup power for PCs, LANs, and workstations. Sadly, due to its high development cost, this initial model didn't sell as well as anticipated, according to Emanuel "Manny" Landsman, who also co-founded the company in 1981.

But APC made hay while the sun shone, quickly replacing the 750 with the 450AT+, which used a non-sinusoidal waveform and delivered 200 W. It was smaller and cheaper than the 750 and developed in just one weekend by co-founder Neil Rasmussen. This new product, the Back-UPS, became the foundation for APC's growth.

"I came in to work on Monday, and he had a little breadboard built on a piece of wood, and the damn thing worked," Landsman said. "It took the price way down from the overpowered sine wave one, and we started selling the Back-UPS, the product that became the foundation for APC."

### The role of UPS in IT operations

The APC UPS has come a long way since then with continuous innovation. It plays an increasingly critical role in keeping IT operations up and running, and it is becoming even more critical as pressures on IT infrastructure intensify. Schneider Electric also saw the value of this technology and acquired APC in 2007.

Today, data centres and IT managers must meet enormous data demands. Global data centre growth is predicted to double from 212.53 billion in 2023 to 437.33 billion in 2030, driving the demand for power and power protection.

Here are three market trends driving the need for resilient IT infrastructure supported by UPS technology.

### Ai drives data centre demand

The growing use of AI across industries, from healthcare to logistics, is putting immense pressure on IT infrastructure. AI requires massive data processing capabilities, leading to increased demand for data centre computing capacity and power. Goldman Sachs forecasts a 160% growth in data centre power demand by 2030.

As AI applications become integral to business functions, unplanned downtime could cause major disruptions, such as in operating rooms, traffic systems, or navigational tools. UPS systems ensure that critical infrastructure remains operational, even during power outages.

### The sustainability challenge

The increasing demand for power comes when IT and data centre managers face pressure to decarbonise operations. According to the International Energy Agency, data centres' global power consumption is expected to exceed 1,000 TWh by 2026. This trend is pushing operators to seek solutions that better manage consumption, including renewable energy sources and energy-efficient equipment.

UPS technology plays a crucial role in sustainability efforts. Newer models have a smaller carbon footprint due to improved energy efficiency and the use of recycled materials.

Furthermore, some UPS models allow for replacing power and battery modules without replacing the whole unit, and lithium-ion batteries provide longer life with reduced maintenance costs. These features help make infrastructure more resilient and support sustainability goals.

### Edge computing growth accelerates

With the rise of AI, automation, and other technologies, demand for real-time data processing is increasing, driving the need for edge computing. IDC predicts worldwide spending on edge computing will reach US\$232 billion by the end of 2024, up 15.4% from 2023.

Edge networks are usually part of hybrid IT environments used by about 80% of organisations, and place data processing closer to data sources and devices, supporting real-time critical applications.

As a result, edge sites require the



Ben Selier, vice president, Secure Power, Anglophone Africa at Schneider Electric.

same power protection as larger data centres, including remote monitoring and management capabilities available in some UPS models.

### Reliable power for a resilient digital future

Security is increasingly important in a data-driven world, and UPS network connectivity helps implement physical and cybersecurity measures to protect infrastructure investments. Here, UPS network connectivity helps organisations implement physical and cybersecurity controls to protect their infrastructure investments and gain peace of mind. In addition, this DCIM technology can also boost sustainability efforts.

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

## Axiz and Duracell Energy join forces in African market

Axiz has announced a collaboration with Duracell Energy to expand access to advanced energy solutions across Africa. This partnership will address the increasing demand for energy independence and sustainability, offering homes and businesses greater control over their energy consumption, reducing dependence on traditional power grids, and ensuring a reliable power supply.

Axiz, which has a dedicated solar division, plans to use its channel-focused model and extensive distribution network to bring these products to a wider audience. Rory Twort, managing executive for Sales at Axiz, said that partnering with Duracell Energy will support Axiz in delivering on its promise of bringing high-quality, sustainable energy solutions to the African market.

Duracell Energy, a market leader in solar products across South Africa, sees significant growth potential in this partnership. "The scope and opportunity for scalability of the Axiz partnership positions Duracell Energy to increase our market visibility and provide more homeowners with energy security, while lowering their energy bills," said Dylan Murray, sales manager for South Africa at UK-based Puredrive Energy, an authorised Duracell Licensee. "Our products primarily support homeowners and small businesses to lower their costs and boost energy independence with sustainable, green solutions."

The Duracell Energy Home EcoSystem includes a range of solar and storage solutions such as the Dura-I 6 kW inverter, the 5 kW Duracell 5+ battery, and the 7.3 kW EV Charger, managed through the Duracell Energy App. This app enables seamless management of energy storage, charging, and usage, allowing homeowners to automate and control their energy needs with ease.

A key addition to this lineup is the soon-to-be-released Dura5 5 kWh storage battery, which uses the latest advancements in lithium iron phosphate (LiFePO4) technology. This battery offers high charge and discharge rates, ensuring continuous power during outages. It also provides versatile installation options, such as wall mounting and modular stacking, allowing the system to grow according to a household's needs. "The Dura5 battery offers a market-leading choice in terms of reliability and performance," added Dylan Murray.

In addition to the product offerings, Duracell Energy and Axiz will provide customer support and educational content to help homeowners understand the benefits of solar technology. Duracell Energy will also support resellers with marketing resources, including quality leads generated through its website and social media campaigns, along with custom-approved graphics for installers lacking marketing capacity.

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

## PV and battery storage to power Limpopo water infrastructure project

Sustainable Power Solutions (SPS), an asset management company in the renewable energy sector, has been announced as the preferred bidder for providing power to the Olifants Management Model Programme (OMMP). SPS's solar photovoltaic (PV) and Battery Energy Storage System (BESS) will power the first stages of the infrastructure development.

### Public-private collaboration is key

The OMMP is a public-private collaboration between institutional members (government) and commercial members (the private sector, including mining companies and industrial users). It is being implemented by the Lebelelo Water User Association (LWUA), soon to be known as Badirammogo Water User Association.

The OMMP involves constructing 200 km of bulk raw water pipelines and 675 km of potable water pipelines, along with several pump stations, reservoirs and water treatment works. Rolled out in phases, the programme fast-tracks bulk raw and potable water supply infrastructure for communities and commercial users (including mines, industrial users) and enhances water supply to Polokwane Local Municipality, which faces a 30 ML/day water shortage.

### Renewable energy-powered water supply

As part of the contract, SPS will employ leading-edge solar and battery technologies to power key infrastructure that forms part of Phase 2B & 2B+ of the OMMP for a duration of 25 years.

Phase 2B & 2B+ of the OMMP includes a new pipeline that will transport bulk raw water from

the Flag Boshielo Dam to reservoirs across the Northern Limb of the Bushveld Igneous Complex. From there, 40% of the water will supply mines, and 60% will be treated at water treatment plants in Mokopane and Sekuruwe, providing potable water to 140,000 community members and addressing Mokopane's water shortfall.

The solar energy capacity will start at 16 MWp for phase one, increasing over two further phases over the next ten years to 23 MWp in the final phase. The BESS, with a capacity of 13.3 MWh, will ensure a reliable and sustainable power supply for the three pump stations under construction, each to be equipped with two 3.5 MW pumps. The renewable energy solution (RES) will provide all operational and auxiliary power to the three pump stations, as their current locations prevent connection to the utility grid.

Notably, SPS' RES will be one of the largest off-grid solar initiatives in South Africa to date, providing electricity to underpin water distribution.

"This project is an exciting pivot for SPS," said Paul Rosenbrock, business developer at SPS. "We are leveraging our renewable energy expertise to make a tangible difference in communities that need it most. By supplying a renewable energy solution that will pump bulk raw water into areas currently lacking access, we are not only supporting the mining sector but fundamentally improving the quality of life for thousands of people."

The RES will also have a profound environmental impact, reducing over 13 million kilograms of carbon emissions annually by eliminating the need for diesel generators.

Enquiries: [www.sps.africa](http://www.sps.africa)



## Ledvance lights up Nelson Mandela Bridge

Johannesburg's iconic Nelson Mandela Bridge and Ntemi Piliso Street have been illuminated by Ledvance, marking the launch of the Jozi My Jozi movement. Its innovative solar-powered streetlights ensure uninterrupted lighting even during power outages, whilst the bridge has been kitted out with dynamic RGB floodlights.

The Nelson Mandela Bridge Project's objective was to restore the bridge's lights as a symbol of change and hope. As part of the Jozi My Jozi movement, the project includes a series of initiatives such as illuminating the Nelson Mandela Bridge, installing solar lighting, replacing glass panels on the bridge, and enhancing waste management and streetlights along Ntemi Piliso Street. The project also focuses on promoting social development.

### The challenge

Johannesburg is characterised by a stark contrast between wealthy and impoverished areas. High crime rates, including violent and property crimes, pose challenges for residents and businesses. Cable theft and power outages often leave streets dark at night, causing commuters to feel unsafe as they travel between work, school, and home.

For many commuters from outlying areas, crossing the Nelson Mandela Bridge became impractical, increasing their travel times and daily struggles.



### The solution

Jozi My Jozi is a grassroots movement for the people, by the people—igniting hope and instilling pride in the city of Johannesburg. It brings together a consortium of companies and individuals from both the private and public sectors.

Ledvance South Africa, in partnership with a project specialist company, was invited to contribute sustainable solutions to revitalise the inner city, with the aim of inspiring positive change that could ripple across South Africa.

The Nelson Mandela Bridge Project was launched to restore the bridge's lighting, reinforcing its status as a beacon of hope and transformation.

Ledvance retrofitted the Nelson Mandela Bridge with OneEightyOne RGBW floodlights, providing a dynamic and customisable lighting solution. Additionally, Ledvance Performance Solar Streetlights (60W, 4000K) were installed

from Jan Smuts Avenue/ Empire Road to The Maharishi Institute and other areas throughout Johannesburg.

### The benefits

This initiative is expected not only to enhance the visual appeal of these key urban landmarks but also to improve commuter safety, fostering a greater sense of pride, security, and community within Johannesburg.

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



WWW.LEDVANCE.COM

# POWER THROUGH LIGHT SOLAR STREETLIGHT SOLUTIONS

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## Understanding high-performance floodlights and their applications

**H**igh-lumen floodlights are designed to illuminate large areas and serve a variety of applications depending on their light output and beam angles. When planning specialist applications, look for the combination of lumen output and beam angle to suit your requirements.

Most often, a combination of floods can be used to achieve perfect light coverage. Radiant has put together some use case examples to highlight the different applications:

### Example 1

A Radiant Lighting 75,000-lumen, 500 W integrated LED floodlight (extreme brightness) with a 60-degree beam angle...

**Stadiums and arenas:** These floodlights are typically mounted high and require intense brightness to light up large spaces from a distance. A 60-degree beam angle works well here to focus the intense light onto the field or arena floor.

**Industrial yards and ports:** The 60-degree beam angle makes this application suitable for illuminating specific, open outdoor spaces, ensuring worker safety and clear visibility during nighttime operations.

In this instance, the combination of high lumens and 60-degree beam angle offers highly focused, long-range lighting.

### Example 2

A Radiant Lighting adjustable 36,000-lumen 150 W-240 W Integrated LED floodlight

(moderate-high brightness) with 120-degree beam angle...

**Sports fields and medium-sized parking lots:** A 36,000-lumen floodlight with a 120-degree beam angle is excellent for lighting wide areas like sports fields, basketball courts, or parking lots, where moderate distance and brightness are needed.

**Building exteriors and warehouses:** Illuminate larger surfaces such as building exteriors, warehouse yards, or residential compounds, with sufficient light without oversaturation.

**Concerts and outdoor events:** A wider 120-degree beam angle is often used to illuminate stages, audience areas, or festival grounds, providing more diffuse, evenly spread light.

Here, the combination of high lumens and 120-degree beam angle is useful for illuminating broad areas like event grounds, concert venues, or open fields, where evenly distributed light is needed.

### Example 3

A Radiant Lighting 15,000-lumen, 100 W Integrated LED floodlight (moderate brightness) with a 90-degree beam angle...

**Small parking lots or gardens:** A 15,000-lumen floodlight with a 90-degree beam angle can provide targeted light to small spaces, such as home gardens, smaller parking lots, or walkways.

**Security lighting:** This type of lighting



covers a wide perimeter in residential or small commercial settings, ensuring broad visibility while maintaining moderate brightness.

**Small architectural or landscape lighting:** Illuminate building facades, small parks, or landscape features with focused lighting.

In these examples, the 90-degree beam, in combination with the relatively lower 15,000 lumens, provides balanced lighting for mid-sized spaces.

In summary, the choice of lumen output and beam angle depends on the size of the area and the desired lighting intensity.

To establish the correct lighting performance for the areas mentioned above, a lighting design should be done to determine the lux levels needed to achieve the desired lighting performance and levels required.

When making your purchase, it is well worth factoring in the relevant warranty period, too. The Radiant Lighting options mentioned are all covered by a five-year warranty, so once they are installed, these low-maintenance solutions need no further attention.

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

## Signify and Mercedes-AMG PETRONAS Formula 1 Team launch new partnership to drive responsible innovation on and off the track

**Signify**, the world leader in lighting, announced a new partnership with the Mercedes-AMG PETRONAS F1 Team. Connected by their shared passion for technological innovation and sustainability, the partnership will drive forward the team's vision of becoming one of the world's most sustainable professional sports teams.

Eric Rondolat, CEO, Signify said: "We are proud to partner with Mercedes-AMG PETRONAS F1, a team that is determined to lead both on and off the track. We share a passion for responsible innovation to drive progress in our industries and beyond. Our joint commitment to act responsibly will lead us to develop transformative and disruptive new technologies that elevate performance to the benefit of people and the planet.

We are excited to have the opportunity to support the winning objective of Mercedes-AMG PETRONAS F1, providing human-centric lighting innovations that can enhance the team's performance. We are honoured to associate our brands with one of the strongest in the world and to deliver unforgettable racing experiences for fans at the track, as well as watching and gaming at home.

With many collaborations already begun, I am eager to see this partnership grow."

Toto Wolff, Team Principal and CEO, Mercedes-AMG PETRONAS F1 Team, commented: "Innovation and performance are at the heart of everything we do. We are also conscious of our wider social responsibilities and therefore embed sustainability in every action.

Partnering with Signify is an exciting step that will help us make further progress in both of these areas. Their world-leading lighting technology already powers several night races and their pioneering commitment to climate action is inspiring. We look forward to working together to establish synergies in this area and their support in our ambition to become one of the world's most sustainable sports teams.

We also believe that well-being is linked closely with performance. Signify's lighting technology and innovation will ensure optimal conditions for our team members, and we are excited to explore how we can optimise these opportunities further."

Richard Sanders, chief commercial officer, Mercedes-AMG PETRONAS F1 Team added: "We are thrilled to

welcome Signify into our partner family. We are already privileged to collaborate with some of the most innovative companies in the world. Adding another world-leading business to our partner ecosystem in Signify is therefore fantastic. We are excited to collaborate with them through their innovative technology and commitment to sustainability. Together, we are confident that we will create a partnership with a profound impact and lasting legacy."

### Environmental responsibility

Signify has led the transformation and decarbonisation of the lighting sector, and recently announced its 2040 Climate Transition Plan, setting out its vision to reach net-zero by 2040. The company has reduced greenhouse gas (GHG) emissions across the full value chain by 50% since 2019 and continues to advocate for energy efficiency and an accelerated energy transition.

With the new partnership comes a commitment from Signify to share knowledge and expertise to support Mercedes-AMG PETRONAS F1 Team in developing its Climate Transition Plan.

### Well-being and performance

To win in Formula One, every member of the team must perform to their full potential at every moment. Signify's lighting innovations will augment the team's efforts to create optimal conditions for drivers, engineers and team members, helping them see, feel, and perform at their best.

NatureConnect, EyeComfort and other technologies will bring the power of daylight indoors to aid concentration with light that is comfortable for the eyes and support the body's natural rhythm and ability to adjust to a challenging global schedule.

### Unforgettable experiences

Our lighting shines on night circuits in Singapore and Las Vegas, ensuring the fastest show on earth is perfectly lit. And for those not at the track, Signify delivers immersive TV and gaming surround lighting to transport fans at home to the heart of the action.

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



Official Team Partner

Signify



AMG PETRONAS FORMULA ONE TEAM



## BEKA Schröder luminaires brighten up Sun City

BEKA Schröder is proud to have supplied numerous outdoor LED luminaires to Sun City Resort throughout the past few years, thereby enhancing the resort's breathtaking exterior and assisting it in keeping its energy consumption at a minimum.

Furthermore, all luminaires have been designed and manufactured in South Africa, to ensure a long luminaire lifetime as our continent's harsh environmental conditions have been considered.

### Supplying Sun City

Sun City is a luxury resort and casino in the North West Province of South Africa. It consists of several themed sub-resorts with hotels on each, including the original Sun City Resort, The Cabanas, The Cascades, and the Lost City (The Palace).

BEKA Schröder is particularly proud of the below installations at Sun City.

### The Palace Towers

The captivating lighting within the Palace Towers is made possible by BEKA Schröder's LEDNOVA LED luminaires. Known for their durability, the LEDNOVA ensures optimal photometric performance and reliability, effectively reducing energy consumption and maintenance needs in all types of lighting applications.

### Entrance to Valley of Waves Water Park

The newly introduced SOZELLA solar post top luminaires now light up the entrance to the Valley of Waves water park. The SOZELLA provides a modern design with clean lines using state-of-the-art technology.

This solar luminaire is designed to operate independently of the electrical grid and relies solely on solar energy for power, eliminating the need for external electricity sources or wiring infrastructure. This makes it highly suitable for remote locations, areas with unreliable power supply, or regions where grid connection is difficult or costly.

The lighting system is designed to be efficient and reliable, with low maintenance requirements and no electricity costs. In addition to its energy efficiency and durability, the SOZELLA post top luminaire is also a sustainable lighting solution that reduces carbon emissions and promotes a greener environment.

### Valley of Waves Water Park

The Valley of Waves is illuminated by the ZELA post top and OMNISTAR-MIDI floodlight luminaires, delivering comprehensive lighting coverage. The FOCUS accentuates key features within the vicinity, enhancing its enchanting ambiance after dusk.

### The Gardens

LEDPOST bollards and ZELA post top luminaires light up the pathways winding through the gardens of the Sun City Resort. Meanwhile, the FOCUS floodlight brings out the lush foliage, adding to the serene ambiance.

### General Streetlighting

BEKA Schröder's renowned LEDLUME LED streetlight has been installed throughout the Sun City Resort. It



The captivating lighting within the Palace Towers is made possible by BEKA Schröder's LEDNOVA luminaires.

replaced outdated streetlights using conventional light sources. Installed a decade ago, these LEDLUME streetlights continue to radiate with brightness and efficiency.

### Locally manufactured

BEKA Schröder develops and manufactures energy-efficient LED lighting products in South Africa that are designed and suitable for local conditions.

"We are very proud to be associated with Mabone Consultants and Sun City Resort," BEKA Schröder commented.

Enquiries: [ind@beka-schreder.co.za](mailto:ind@beka-schreder.co.za)



SOZELLA solar post top luminaires light up the Valley of Waves water park entrance.

## Aurora's high-efficiency LED flat panel: The ideal choice for commercial installations

Aurora Lighting Africa has launched the 140lm/W Backlite LED Flat Panel, catering to the growing demand for energy-efficient and versatile lighting in commercial spaces. This advanced LED flat panel offers superior performance, energy savings, and cost benefits, making it an excellent choice for businesses aiming to enhance operational efficiency and sustainability.

### Unmatched energy efficiency

One of the key features of Aurora's Backlite LED Flat Panel is its high efficiency of 140lm/W. This means businesses can reduce energy consumption by up to 60% compared to traditional lighting systems. In spaces requiring long lighting hours, such as offices and retail environments, the reduced energy use helps businesses significantly lower their electricity costs. As energy prices rise, the savings over time make this flat panel a worthwhile investment.

### Long-term cost savings

Aurora's LED Flat Panel also provides long-term cost benefits due to its extended lifespan of 50,000 hours. This longer lifespan means fewer replacements, reducing both maintenance and labour costs. For commercial spaces where downtime and disruptions are costly, Aurora's flat panels offer reliable, long-lasting lighting without frequent maintenance interruptions.

### Superior light quality

The 140lm/W Backlite LED Flat Panel offers consistent, even illumination across large spaces. This eliminates issues like shadows or glare commonly associated with traditional lighting. By distributing light

evenly, Aurora's panel creates a glare-free, comfortable environment that enhances both visibility and productivity.

Available in 4,000K and 5,000K colour temperatures, businesses can customise the lighting to suit their specific needs, cooler tones promote focus in workspaces, while warmer tones create a relaxing atmosphere in hospitality settings.

### Sleek design and versatility

Aurora's Backlite LED Flat Panel features a sleek, modern design that integrates seamlessly into any commercial setting. With a slim profile and clean aesthetics, the panel not only performs well but also enhances a space's visual appeal.

Designed to fit standard ceiling grids, the panel is easy to install, making it ideal for both retrofitting existing spaces and outfitting new ones. This versatility makes it suitable for a range of applications, from offices and retail stores to healthcare facilities.

### Environmentally friendly

As sustainability becomes a priority for many businesses, Aurora's 140lm/W LED Flat Panel offers an environmentally friendly lighting solution. The panel contains no hazardous materials, such as mercury, making it safer for both the environment and people.

Its long lifespan means fewer replacements, reducing waste. Additionally, its lower energy consumption reduces carbon emissions, helping businesses



achieve their environmental goals and green building certifications.

Easy installation and smart controls  
The panel's lightweight design allows for quick and easy installation, minimising downtime. It is also compatible with advanced lighting controls, such as dimming and integration with smart building systems. This enables businesses to further optimise energy use by adjusting lighting levels based on occupancy or natural light.

Aurora Lighting Africa's 140lm/W Backlite

LED Flat Panel is an efficient, sustainable solution for modern commercial spaces, providing enhanced comfort, productivity, and energy savings.

"The launch of these high-efficiency LED Backlite Panels aligns with global efforts to reduce energy consumption and to provide a best-in-class lighting solution for commercial spaces," said Scylagh Clunnie, managing director of Aurora Africa, at the launch of the new catalogue.

Enquiries: [info@aurora-africa.com](mailto:info@aurora-africa.com)



## HV Test Academy opens new KZN training and testing facility

The HV Test Group of Companies, founded in 1985, has become a leader in electrical training and testing locally. To keep up with demand, it recently opened an additional testing centre in KwaZulu-Natal (KZN).

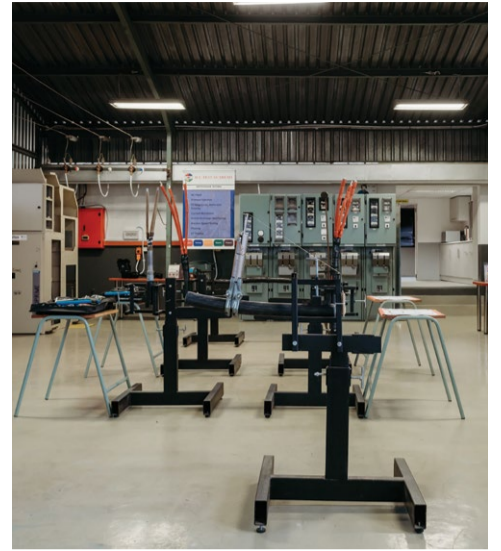
Over the years, the HV Test Group's training department has evolved into what is now known as HV Test Academy (Pty) Ltd. The company introduced its first Cable Fault Location course in the early 1980s, setting a benchmark for specialised training in this

field. Today, it continues to offer advanced courses incorporating the latest technology and testing methods.

### KZN gets new training centre

HV Test Academy has established itself as a reputable training provider and, in response to growing market demand, recognised a need for its high-quality programmes and commitment to workforce development in other regions too.

Its newly launched training centre in KZN addresses the regional need for skilled operators by offering a state-of-the-art switching simulator, designed to bridge the skills gap amongst operators working on electrical networks. This intensive and practical course caters to smaller groups of four to six participants, ensuring each learner receives personalised attention from our facilitators. The practical sessions are meticulously structured to guide learners through the correct sequence of steps for safely working on electrical apparatus and restoring it to service post-maintenance.



### Accreditation matters

H.V.'s training programmes are accredited by the Energy and Water Sector Education and Training Authority (EWSETA), the Fibre Processing and Manufacturing Sector Education and the Training Authority (FP&M SETA), and the South African Institute of Electrical Engineers (SAIEE).

"Choosing accredited providers for training is crucial to enable employers to claim training expenses under skills levies," explains Isak Hattingh, general manager at the HV Test Academy.

Accreditation can be verified by requesting accreditation validation letters from the provider or consulting the relevant registration body.

With a steadfast commitment to excellence, the HV Test Academy remains at the forefront of electrical training, equipping professionals with the skills needed to excel in the evolving electrical industry.

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

#### DECEMBER 2024 FEATURES

- DBs, switches, sockets and protection
- Tools of the trade
- Lighting

#### JANUARY 2025 FEATURES

- Earthing, lightning and surge protection
- Cables and cable accessories
- Lighting

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