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## APEX launches revolutionary control & monitoring operating system for renewable energy management



Nick Roche,  
Chief Product  
Officer (CPO)  
at Rubicon.

**A**pexOS (Operating System) is the innovative new software from leading energy solutions manufacturer APEX, a subsidiary of sustainable technology company Rubicon. "ApexOS is going to be a gamechanger," says Nick Roche, Chief Product Officer (CPO) at Rubicon. "ApexOS has been designed to deliver unparalleled remote control and monitoring capabilities for any device using it."

### Energy management

"ApexOS is a huge step forward in the world of energy management and control," explains Roche. "We designed it from the ground up, specifically to facilitate cloud monitoring and control of renewable energy-related products. We currently design and manufacture a range of products, from residential batteries, inverters and geyser controllers, to microgrid controllers for commercial battery energy storage applications. ApexOS is used in all of the latest generation of these products, and it gives us a powerful communications interface, as well as a suite of tools on the devices."

In terms of energy management, ApexOS does not actually do the management – instead, it enables that functionality. "Devices with ApexOS are now ready to be controlled by our remote energy management cloud software and tools – APEX Cloud Services," explains the CPO. These include remote monitoring and control for individual devices, fleet management, and cloud-based intelligence such as making the devices loadshedding aware or site optimisation.

"Practically speaking, we can now tell the device what we want it to do – charge, discharge, join a Virtual Power Plant (VPP), dump loads, change modes and so on. For example, if we are in a situation where the loadshedding schedule suddenly changes to level 6, we can either manually or automatically reconfigure a device to respond appropriately to ensure continuity of supply," says Roche.

This feature helps to manage some of the challenges caused by loadshedding. "When a loadshedding event ends and power is restored, every appliance in your neighbourhood wants to use that power supply. In particular, all the geysers that have been off for two hours will try to reheat at the same time, which is a significant collective load on the grid. A new problem that is massively adding to that is all the backup systems that have been added to the networks, which will also try to recharge at the same time

once power has been restored," says Roche. "Distribution networks are subjected to massive spikes in demand that they were never designed to handle, and that is, at best, causing municipalities to pay large notified maximum demand penalties, and at worst, causing damage."

Using ApexOS and Apex Cloud Services' smart load resumption, these loads can be managed, protecting power infrastructure and ensuring a smoother, acceptable grid load.

ApexOS includes some other tools to help users. ApexOS-equipped devices have a local Wi-Fi hotspot that hosts a webpage for local

**Continued on page 10**

Synerji Floods provides innovative LED Flood lights in Black or White designs. The lights offer a perfect blend of Color Temperature and Power, with a diffuser made of Opal PC for a captivating glow. Available in various wattages including 20W, 30W, and 50W. Easy to install with an IP68 Cable connector on the Face Flood.

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## MONATE LED Post Top

The Monate LED Post Top is a modern indirect lighting luminaire, with a vacuum-moulded indirect reflector. The incorporation of modern LED technology, the Monate emits a pleasant, low glare light. The cost-effective indirect lighting for the creation of ambience.

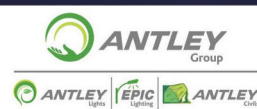
Read the article  
on page 14!

### Materials and finish

- High pressure die-cast aluminium spigot base
- Aluminium reflector
- High impact acrylic conical diffuser bowl
- High impact glass filled nylon top cover
- All external screws are Stainless steel

### Application areas

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- Shopping areas
- Car parks
- Pedestrian areas
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## Bad battery etiquette could prove costly

Business these days is filled with gadgets and tools that use batteries for power, whether it be a laptop and smartphone, or powertools that are used in the business's actual functioning – like for an electrical contractor. But are you taking proper care of your batteries?

### 1. Fake is not fine

The cost of replacing original batteries can be daunting and not always the only option, but you need to at least buy power supplies that have a good reputation to replace your old battery. Counterfeit and knock-off batteries do not last as long as products from the manufacturers, nor do they provide the same performance. If you can, always buy original equipment manufacturer (OEM) batteries as they are designed to work with your specific product.

### 2. Transport is important

Like your powertools, the batteries need to

be stored and transported safely to avoid any damage. Most tools these days come in a specially designed storage box that includes either foam inserts with cut-outs or secure snap-in holders. This allows you to transport your tools without the fear of a battery being damaged and its physical integrity being compromised to the point where it could explode – lithium-ion batteries in particular are sensitive to heat and cold, so leaving them exposed is a bad idea.

### 3. Do not just throw away

Batteries work by chemical reaction, and while this is a controlled event, problems can still arise if something goes wrong. So when you get rid of a battery, you should make sure that your recycling process is safe and performed by professionals. You cannot just throw them in the trash – if the battery body is pierced, for example, it could lead to an explosion or fire.



## Starting a business? Follow these tips...

Starting an electrical contracting business requires careful planning, preparation, and attention to various key considerations to ensure success.

Develop a comprehensive business plan that outlines your business goals, target market, services offered, pricing strategy, marketing plan, financial projections, and growth strategy. A well-defined business plan serves as a roadmap for your business and helps you stay focused on your objectives.

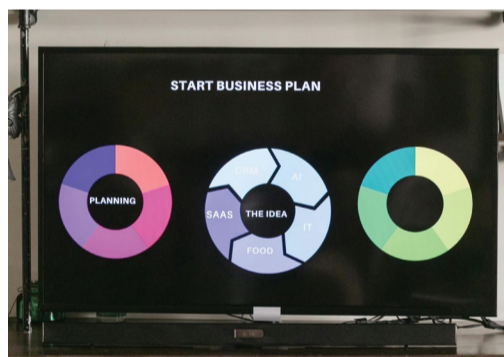
Familiarise yourself with the legal and regulatory requirements for starting and operating an electrical business in your area. Obtain necessary licenses, permits, and certifications, and ensure compliance with building codes, safety regulations, and industry standards. Consider consulting with legal and financial professionals to ensure that your business structure and operations are legally compliant and adequately protected.

Obtain appropriate insurance coverage to protect your business, employees, and clients against potential liabilities, accidents, and property damage. Consider securing general liability insurance, worker's compensation insurance, professional liability insurance, and business property insurance to mitigate financial risks and safeguard your assets.

Focus on delivering high-quality workmanship and exceptional customer service to build a strong reputation and earn the trust of your clients. Strive for excellence in every aspect of your work, from initial consultations and project planning to execution and follow-up. Establish clear communication channels, respond promptly to inquiries and concerns, and prioritise customer satisfaction to foster long-term relationships and generate referrals.

Ensure safety in all aspects of your business operations to protect your employees, clients, and the public from hazards and accidents. Implement comprehensive safety policies, procedures, and training programs to ensure compliance with safety regulations and best practices. Equip your team with appropriate personal protective equipment (PPE) and invest in safety equipment, tools, and technology to minimise risks and promote a culture of safety.

Establish sound financial management practices to effectively manage your business finances, track expenses, and also maintain profitability. Develop a realistic budget, monitor cash flow, and keep accurate financial records to make informed decisions and identify areas for improvement. Consider consulting with a



financial advisor or accountant to develop a financial plan, manage taxes, and optimise your business finances for long-term success.

Invest in marketing and branding efforts to promote your electrical business and attract clients. Develop a strong brand identity, including a professional logo, website, and marketing materials that reflect your business values and unique selling propositions. Implement a multi-channel marketing strategy that includes online and offline tactics such as website optimisation, social media marketing, networking, referrals, and advertising to reach your target audience effectively.

Stay informed about industry trends, technologies, and best practices through ongoing education, training, and professional development. Invest in your own skills and knowledge, as well as those of your employees, to stay competitive in the rapidly evolving field of electrical contracting. Seek opportunities for certifications, workshops, and industry associations to expand your expertise and enhance the quality of your services.

By keeping these important considerations in mind and approaching your electrical business with careful planning, professionalism, and dedication, you can lay a solid foundation for success and achieve your goals in the dynamic and rewarding field of electrical contracting.

## Going green & why SA is so slow



South Africa's slow adoption of green technology can be attributed to many factors, says local news websites engineeringnews.co.za and moneyweb.co.za, including economic, social, political, and infrastructural challenges. Here are some key reasons why we are somewhat behind the rest of the world in going green...

### 1. Dependence on fossil fuels

South Africa has historically relied heavily on coal for electricity generation, with coal-fired power plants supplying the majority of the country's energy. The dominance of the coal industry has hindered the transition to renewable energy sources such as solar, wind and hydroelectric power, despite abundant renewable energy potential.

### 2. Infrastructure constraints

We face infrastructure challenges, including outdated grid systems and limited access to electricity in rural areas. The lack of modern infrastructure hampers the integration of renewable energy sources into the grid and impedes the widespread adoption of green tech such as solar panels.

### 3. Policy & regulatory barriers

Inconsistent or inadequate policies, regulations and incentives have created barriers to the development and deployment of green technologies. Uncertainty around government support for renewable energy projects, complex permitting processes, and bureaucratic hurdles deter investment and innovation in the green technology sector.

### 4. Economic considerations

Economic factors, including high upfront costs and long payback periods associated with green technology

investments, pose challenges for individuals, businesses and government entities in South Africa.

### 5. Skills & capacity constraints

The country faces skills shortages and capacity constraints in the green technology sector, including a lack of trained personnel, expertise, and research and development facilities. The shortage of skilled workers and specialised knowledge also impedes innovation, technology transfer, and the scaling up of green initiatives.

### 6. Political & socioeconomic factors

Political instability, governance issues and socioeconomic disparities in South Africa have implications for the adoption of green technology. Limited political will, competing interests, and socioeconomic inequalities may hinder efforts to prioritise sustainability and environmental conservation nationally.

### 7. Energy security concerns

South Africa's energy landscape is shaped by considerations of energy security, reliability, and affordability – all of which have been controlled (badly) by power utility Eskom and regulator NERSA. Concerns about grid stability, energy access, and the need to meet growing energy demand may lead policymakers to prioritise conventional energy sources over green alternatives in the short term.

Addressing these challenges to help accelerate the adoption of green technology in South Africa will require co-ordinated efforts from government, industry, civil society, and other stakeholders. The sooner this can be done, the better for South African citizens and the failing economy.



## Keep your office running past Loadshedding stage 7

The new year started with increased, relentless loadshedding schedules, with stage 6 reached numerous times during the first two months. Losing power up to 10 hours a day can be detrimental to any small business, but help is at hand from portable power solution provider EcoFlow. Meet the EcoFlow Delta Pro – powerful enough to run an 1 800W air conditioner system for up to three hours.

The Delta Pro is able to provide full home or office backup, with up to 7 200W AC output that will power 99% of appliances. The device has a lithium-iron phosphate (LFP) battery that utilises the most up-to-date backup technology, enabling the device to recharge from flat to 100% in just 2.5 hours. It also has a 10-year warranty, and supports recharging on a number of power supplies, from traditional wall sockets, to charging docks for electric cars.

What makes this backup power supply truly impressive is its ability to be plugged into your home or office's main supply with little fuss, providing instant power to the entire premises without having to unplug every device and appliance, then connect it to the Delta Pro. "This action is performed via an EcoFlow Transfer Switch, which is sold separately or as part of a bundle



deal," says the development team. "An AC plug cable accessory is needed to connect the Delta Pro power station to the Transfer Switch – that is readily available from any electrician." There is a transfer time of less than 2 seconds, then your power supply is fully restored until the loadshedding stage has completed.

The Delta Pro has a clearly lit LCD screen that provides users with detailed information about the power station's status, and a smartphone app lets you manage the device remotely – you can control everything from the recharge safety levels (the device has a trickle-charge feature that allows for fast charging up to 95%, then a slower and more controlled recharge to 100%), to the built-in torch, all from your phone.

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

## Top tips for tool maintenance

Maintaining and servicing your tools and equipment is a must for any tradesman, more so for electrical contractors who are working with deadly power on a daily basis, says tooling manufacturer and distributor Magnet Electrical Supplies. "You need to have faith in your tools and the only way to do that is to ensure they are operating and working the way they are intended. Any oversight could lead to injury or worse..."

Safety is the first and foremost reason to service your tools. "Well-maintained equipment and tools are less likely to malfunction or fail during use, reducing the risk of accidents, injuries, and electrical hazards on jobsites," says the company. "Regular maintenance helps identify and address potential safety issues such as frayed cords, damaged insulation or worn-out components before they pose a threat to the contractor or others."

You need to have reliable tools that are operating at their best ability. This can only be achieved with proper maintenance and service schedules. Regular cleaning, lubrication, and calibration of tools prevent malfunctions, improve efficiency, and also prolong their lifespan, reducing downtime and costly repairs.

If your tools are not serviced and do not operate properly, your workmanship will suffer. "High-quality work depends on the use of well-maintained tools that produce accurate measurements, cuts and connections," says Magnet. "Clean and properly adjusted tools enable contractors to achieve precise and professional results, enhancing the overall quality and integrity of electrical installations and repairs." Poor workmanship can lead to a bad name in the industry.

"Professionalism and reputation should

be something any tradesperson is proud of," says the tool dealer. "Contractors who maintain their tools demonstrate professionalism, attention to detail, and a commitment to quality craftsmanship. Clients and colleagues perceive well-kept tools as a reflection of the contractor's reliability, competence, and dedication to excellence, enhancing their reputation and fostering trust in their services."

Servicing your tools means that they will operate as and when they are needed. There is nothing worse for a client than to have a contractor saying, "My tools have broken down," and the job is delayed. Sharp blades, calibrated meters, and properly functioning powertools enable contractors to work faster, tackle challenges more effectively, and meet their project deadlines with confidence.

Maintained equipment also leads to cost saving, says Magnet. "Investing time and resources in tool maintenance can lead to significant cost savings in the long run. Regular upkeep and minor repairs extend the lifespan of tools, postponing the need for expensive replacements and minimising downtime associated with tool failures." By maximising the longevity and performance of your tools, contractors reduce overall operating costs and improve profitability.

Simply put, tool maintenance is essential for electrical contractors to uphold safety standards, achieve consistent quality of workmanship, enhance efficiency and productivity, reduce costs, maintain professionalism and reputation, and comply with regulatory requirements. By prioritising tool maintenance as an integral part of their operations, contractors can optimise their performance, mitigate risks, and deliver superior results to clients while ensuring a safe and productive work environment for themselves and their team members.

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



## Know the difference

Many people think that an electrician, electrical contractor and electrical engineer are one and the same. That is not the case, and it is important to know the difference before bringing in the wrong person for the job.

An electrician is a skilled tradesperson who specialises in installing, repairing, and maintaining electrical systems and equipment. Electricians typically work on a wide range of projects, including residential, commercial, and industrial installations. Their duties may include wiring buildings, installing lighting fixtures, outlets, and switches, troubleshooting electrical issues, and ensuring compliance with electrical codes and regulations. Electricians often undergo formal training through apprenticeship programmes or vocational schools and obtain licensure or certification to practice in their respective jurisdictions.

An electrical contractor is a business entity or individual that specialises in providing electrical contracting

services, including design, installation, maintenance, and repair of electrical systems. Electrical contractors oversee projects from conception to completion, managing resources, scheduling work, and co-ordinating with clients, subcontractors, and regulatory authorities. They may employ electricians and other skilled workers to perform electrical work on behalf of their clients. Electrical contractors are responsible for ensuring that projects meet quality standards, safety regulations, and contractual requirements, and they often hold licenses or certifications as required by local regulations.

An electrical engineer is a professional who designs, develops, and evaluates electrical systems, components, and devices. Electrical engineers work on a wide range of projects, including power generation and distribution, electronics, telecommunications, control systems, and renewable energy systems. They use principles of physics, mathematics, and engineering to design and analyse electrical circuits, equipment, and infrastructure, considering factors such



as performance, efficiency, reliability, and safety. Electrical engineers may work in various industries, including consulting firms, manufacturing companies, utilities, research institutions, and government agencies. They typically hold bachelor's or advanced degrees in electrical engineering or a related field and may obtain professional licensure or certification depending on their area of specialisation and jurisdiction.

While electricians, electrical contractors, and electrical engineers all work in

the field of electrical systems and technology, they have distinct roles and responsibilities. Electricians perform hands-on installation and maintenance tasks, electrical contractors manage projects and oversee electrical work, and electrical engineers design and develop electrical systems and components. Each profession requires specialised skills, knowledge, and training to effectively meet the needs of clients and ensure the safe and reliable operation of electrical systems.



## Bright ideas to get your business booming

South Africa has been struggling to rebuild its economy since before the Covid pandemic, and while times are tough, here are five business tips from entrepreneurial help website bigcommerce.com that can help you turn your business into a success.

### Focus on customer service

Providing excellent customer service is essential for building those long-term relationships and securing repeat business. Listen to your clients' needs, communicate clearly and professionally, and strive to exceed their expectations with your work quality and reliability. Respond promptly to inquiries, address concerns promptly, and maintain a positive and respectful attitude at all times.

### Invest in training & certification

Continual investment in training and certification to stay updated on the latest industry standards, technologies, and best practices is great advice. Attend workshops, seminars and industry events to expand your knowledge and skills in

electrical work, safety regulations, and business management. Obtaining relevant certifications and licenses demonstrates your expertise and commitment to your professional development, enhancing your credibility and marketability.

### Embrace technology & innovation

Use advancements in technology to help streamline your business operations, improve efficiency, and stay competitive in the market. Explore digital tools and software solutions for project management, scheduling, invoicing, and managing your customer relationships. Consider adopting advanced electrical technologies such as smart lighting, energy management systems, and renewable energy solutions to offer value-added services to your clients.

### Build strong relationships with suppliers and subcontractors

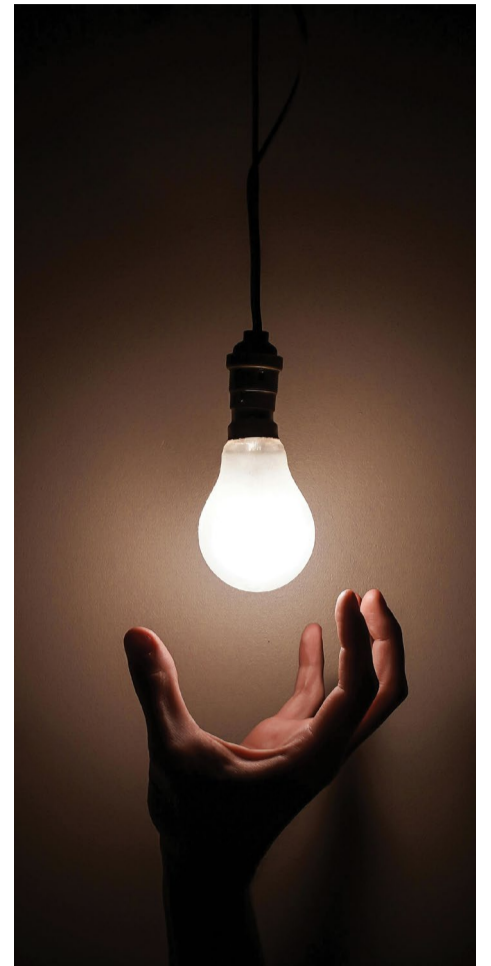
Forge strong relationships with reliable suppliers and subcontractors who can provide quality materials, equipment, and services at competitive prices. Establishing trusted partnerships with these strategic

partners ensures the timely delivery of materials, reduces project delays, and enhances your reputation for reliability and professionalism. Maintain open communication and negotiate favourable terms to maximise value for your business.

### Market your services effectively

Develop a strategic marketing plan to promote your services and attract new customers. Utilise various marketing channels such as your website, social media platforms, online directories, and local advertising to reach your target audience effectively. Showcase your expertise, past projects, and customer testimonials to build credibility and trust with potential clients. Networking with other professionals in the construction industry and participating in community events can also help generate leads and referrals for your business.

By implementing these business tips, electrical contractors (and business owners in general) can improve customer satisfaction, enhance professional reputation, and achieve long-term success.



## Iritron leads the way with manufacturing MCCs for the global stage

Pretoria-based manufacturing and engineering business Iritron has more than 20 years' of experience designing, developing and manufacturing motor control centres (MCCs) built to the highest



international specifications, explains Alwyn Rautenbach, the Chief Executive Officer (CEO) of Iritron. "We are an engineering, integration and manufacturing company providing solutions in the fields of electrical, instrumentation, control systems and decision support systems. We pride ourselves at being the best in the business," says Rautenbach.

The company has ISO 9001:2015 quality management system accreditation and is considerate of the wellbeing of the environment and its staff, customers and contractors, boasting ISO 14001: 2015 and ISO 45001:2018 accreditation. "Iritron's panels also carry the SABS mark," says the CEO. "We engineer solutions that contribute to the effectiveness of operations according to the client's specifications. Return on investment needs to be justified, and that is where Iritron excels," he adds.

As a member of the Electrical Switchgear Association of South Africa (ESASA), Iritron is a custom panel and MCC manufacturer, and as a Level 7 Engineering & Procurement (EP) with the Construction Industry Development Board (CIDB), it provides construction installation management.

"While our professionalism and quality compliance allow us to execute faceted projects successfully, nothing beats word of mouth," says Rautenbach. "Internationally we have completed a number of complex control and automation projects, including the design and manufacture of custom panels and MCCs."

Iritron's most recent project was a multi-million rand cross-border project in Gabon. "This was an expansion project for a

manganese mine in Gabon. The mine is the world's second largest high-grade manganese producer," says the CEO, adding, "The project was designed by a global multidisciplinary EPCM consultancy, and we were tasked with delivering a solution that comprised multiple engineering disciplines with tight deadlines: Electrical MCCs, a control system, CCTV and network cabinets formed part of the delivery." The project was awarded to Iritron owing to its proven engineering expertise and experience in this type of delivery.

"A project of this magnitude included some unique challenges. The company was impacted by worldwide semiconductor shortages that created logistical challenges due to supply chain disruptions and capacity shortages. The ongoing pandemic and port congestion did not alleviate the problem either. This required the Iritron team to turn their operations 'upside down', in the literal sense, to keep to timelines," he explains.

To ensure the project's success, Iritron started work on the MCCs in reverse – activities usually scheduled for the end of a build were completed first. "This was a testament to the ingenuity of the project and the engineering team, as no time was wasted waiting for equipment to arrive," he adds. "The team got ahead as a result of its technical expertise and proven design methodologies, to ultimately reduce overall project risks posed by the supply chain bottleneck. Iritron successfully delivered the project on time and within budget, and in the process securing additional larger projects."

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

## Avoid common electrical pitfalls

Leading tool and equipment distributor Major Tech knows the A to Z of electrical work. Here are some of the most common low-voltage issues faced by electrical contractors and how to get around them... if you have the right tools on hand:

**Voltage drop:** This occurs when voltage levels decrease as electricity travels through a circuit, particularly over long distances or through conductors with high resistance. This can lead to reduced power quality, dimming of lights, and unreliable operation of electrical equipment. Electrical contractors must carefully calculate voltage drop and use appropriate conductor sizes and voltage regulation techniques to mitigate this issue.

**Overloaded circuits:** This situation occurs when electrical loads exceed the capacity of the circuit, resulting in overheating, tripped circuit breakers, and potential fire hazards. Common causes of overloaded circuits include the connection of too many devices or appliances to a single circuit or the use of undersized conductors. Contractors must properly balance electrical loads, install circuit protection devices, and adhere to code requirements to prevent circuit overloads.

**Ground faults:** An unintended electrical connection occurs between an energised conductor and a grounded surface, such as equipment enclosures or building structures, and creates this fault. It can result in short circuits, electrical shock hazards, as well as equipment damage. It is important to identify and correct ground fault issues promptly by inspecting wiring, grounding systems, and equipment bonding connections to ensure proper insulation and safety.

**Poor connection quality:** This can lead to voltage fluctuations, intermittent power issues, and tool malfunction.



Common causes include loose terminals, corroded contacts, and improper wiring techniques. Electrical contractors must perform thorough inspections and testing to identify and repair faulty connections, ensuring secure and reliable connections for optimal performance and safety.

**Electromagnetic Interference (EMI) and Radio Frequency Interference (RFI):** These problem situations can disrupt the operation of low-voltage systems, such as communication networks, audio-visual equipment, and electronic devices. Sources include powerlines, motors, radio transmitters, and electronic equipment. You should employ shielding techniques, grounding methods, and appropriate wiring guidelines to minimise the effects of EMI and RFI and maintain signal integrity in low-voltage systems.

**Voltage regulation issues:** This can affect the stability and reliability of low-voltage systems, particularly in areas with fluctuating power supply. Voltage sags, surges, and fluctuations can damage sensitive equipment and disrupt system operation. Electrical contractors may install voltage regulation devices such as voltage stabilisers or uninterruptible power supplies (UPS) to mitigate voltage variations and ensure consistent power quality for low-voltage applications.

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



## Smart home forecast: What's in store for 2024?

Nowadays, the phrase 'home is where the tech is' defines modern living as South Africans increasingly adopt smart home innovations. These advancements are continuing to adapt and evolve in their capabilities that not only improve convenience and security, they can also decrease energy consumption and contribute to cost savings.

This is according to Dr Andrew Dickson, Engineering Executive at CBI-electric: low voltage, who says, "In 2024, homes will become even more high-tech in terms of the efficiency, functionality, and personalised living experiences they provide. We may still be a few years away from homes resembling those dreamt up by sci-fi movies, but we are already heading in the direction of smart technology becoming less of a luxury and more of a staple in modern homes."

Here are trends that Dr Dickson says will help make our homes smarter this year:

**1. Improved internet speed:** In the early part of the year, the Independent Communications Authority of South Africa (ICASA) will hold another auction for radio frequencies including 5G. What the rollout of more 5G will mean for smart homes is lightning-fast internet speeds, instantaneous communication between devices, and the ability to connect even more gadgets within

a smart home ecosystem for seamless integration and control. It will also allow for greater stability and reliability that will prove particularly useful when it comes to monitoring and controlling critical systems remotely in real time. The rollout of 5G will elevate smart home capabilities, making them even more intelligent and efficient.

In addition, WiFi-7 is set to roll out in the country this year and will improve internet connectivity to devices in the home, extend range, and promises to deliver nearly five times the speed of Wi-Fi 6. This, however, is also reliant on the release of more spectrum and regulatory approvals.

**2. Incorporation of Artificial Intelligence (AI):** Leveraging its data analysis and processing capabilities, AI discerns user patterns and utilises these insights to anticipate and implement homeowners' future decisions. By integrating AI into smart home devices, these products can learn and adapt to a user's habits, optimising efficiency, intuitiveness and responsiveness. Consequently, homes become attuned to the unique needs and preferences of their inhabitants, like a smart lighting system employing AI to automatically adjust the lighting throughout the home in accordance with the time of day or the user's activities.

AI will also assist homeowners who

may not be tech-savvy by offering them the opportunity to implement advanced automation with their smart devices without the need for manual programming. In the future, generative AI will make smart homes even smarter. Soon these tools will not only help to identify appliances that require preventative maintenance but also set up appointments with service providers for their upkeep based on the homeowner's schedule and availability.

**3. Smarter security:** Technological innovations are becoming increasingly incorporated into smart home security systems. Take, for example, the evolution of smart locks that are now activatable through interfaces such as fingerprint recognition, PIN codes, voice recognition, and phone apps. Blockchain is also set to play a crucial role in fortifying smart home security systems, rendering them more resilient and resistant to potential hackers. Additionally, AI has the potential to analyse residents' behavioural patterns, promptly warning if there are deviations or unusual activities within the premises.

**4. Energy optimisation:** Anticipating a 20 200MW energy shortfall in 2024, homeowners are turning to smart home technologies to monitor and manage energy

consumption. These technologies collect and analyse vast amounts of data, helping users identify areas for improvement. Plus, automation can assist them in adjusting their usage even when they're not at home.

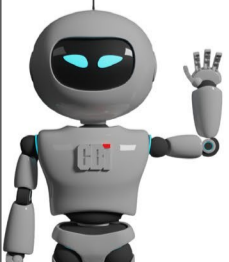
Additionally, as more South Africans embrace rooftop solar, smart technology enables the effortless integration of renewable energy sources to combat the impacts of load shedding while also ensuring that the power produced is used effectively and efficiently.

"In 2024, smart homes will become sanctuaries of innovation, enriching the lives of South Africans and heralding a future where homes understand, adapt and even pre-empt the unique needs of their residents," concludes Dr Dickson.

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

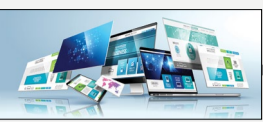


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**CBI electric**  
low voltage



## Artificial Intelligence to aid renewable solutions rollout

Artificial Intelligence (AI) is steamrolling through every industry and business sector around the world. Renewable energy solutions could benefit greatly from AI, too, explains Viren Sookhun, Managing Director (MD) at Oxyon. "CAD (Computer-Aided Design) AI modelling could assist with optimising power plant design, ensuring that various renewables sources are effectively integrated and load balanced, provide optimised and continuous monitoring and much more. However, statistics show that while 95% of companies have an AI strategy, only 14% are ready to integrate it, and this is often driven by fear that AI will take over humans."

### Supporting the transition

AI has many applications in the renewable energy sector. These will help to improve efficiency and speed up the time taken to deliver projects. For example, AI can assist with resource optimisation by analysing large quantities of data that includes everything from weather patterns and energy consumption, to grid performance. "In addition, AI can predict equipment failures and perform preventative maintenance to minimise downtime and ensure the reliable operation of renewable energy infrastructure," says Sookhun.

As a tool, AI can do more than just compute data, says the businessman. "AI can help balance supply and demand, as well as optimise storage and distribution of renewable energy. This is a critical factor given that sources like solar and wind provide intermittent supply to the national grid. AI can also predict energy demand patterns, balance loads, and improve grid stability, all of which help with facilitating the integration of renewable energy sources into existing infrastructure."

### AI is not the be-all and end-all

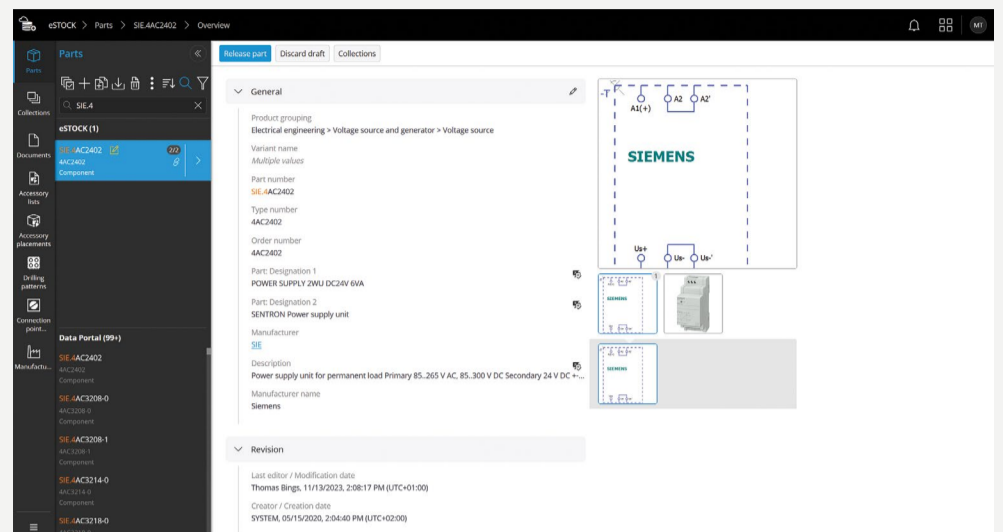
Do not worry – AI cannot and will not fully replace human staff. "If leveraged correctly AI will improve the efficiency and maintenance of these renewable energy solutions, but more importantly ensure that these solutions are rolled out faster so that we can begin to address South Africa's ongoing crippling power crisis," explains the MD. "The reality is that, globally we are not on target to meet the Paris Agreement goals, so anything that we can do to

## ePlan online education provides faster access to device knowledge

German online learning platform Eplan, which is accessible in South Africa, has unveiled an upgraded eStock service, providing companies with access to a centralised device management. "This will allow for simplified collaboration and reducing co-ordination times and media discontinuities," says Sean Mulherrin, a product manager at Eplan. "Working with eStock has become even easier in the Eplan Platform 2024, meaning that users have access to more than 1.5 million datasets."

The eStock platform lets users manage and maintain device data in their device's browser. "All of the data is available, from voltages and currents, to data sheets and component designations," says Mulherrin. He adds, "Users already had access to the data, but what we have done with Version 2024 is to make collaboration easier. The data is of the highest quality, and this allows the users to improve their work quality."

There have been updates to the newest iteration of eStock, such as allowing for devices to be imported from the Eplan Data Portal into eStock. "When making the first keystrokes for the entry, users see all devices in their own database in addition to all the relevant devices for the search in the Eplan Data Portal. Users can then open the desired device in the same window and, in case it has not been already, import



it with one or two clicks. When items are transferred from the Data Portal into Eplan eStock, the software initially created a draft version – meaning that previously approved device data is not automatically overwritten," explains Mulherrin. Users now can add data and make changes to the draft version before approving it and using the device in a project.

The ePlan Data Portal gives users access to an impressive library, expertly curated by component manufacturers who directly up-load and edit device data continuously. "ePlan's developers have paid attention

to efficiency when using data from the cloud, and the system only downloads data changes to a local computer based on the last time it accessed eStock, considerably speeding up data access," says Mulherrin, who concludes, "Through our business development, it is now quick and easy to switch between the source of a local database and an eStock collection based in the Eplan Cloud. This also offers users considered time savings and even greater ease of use."

Enquiries: [www.eplan-software.com](http://www.eplan-software.com)

## e-Waste does not need to weigh you down as you replace equipment and tools

The term 'e-waste' is no longer confined to tablets, computers, smartphones and similar devices. Raeford Liebenberg, a Manager at Silver Moon IT, explains that e-waste now includes any tool or piece of equipment that contains electronic components – which includes almost all powertools. "The need for digital tools



has created a growing problem – when these tools reach the end of their lifespan, they need to be disposed of correctly," says Liebenberg. "This does not mean simply throw them away in an electronics graveyard. Responsible electronic waste management is critical and is fast becoming a global imperative as the world strives to reduce its carbon footprint and emissions."

Legislation was introduced as recently as 2023 to guide this effort in South Africa, but many businesses are not sure where to begin this process. The easiest and best way to start is by partnering with a reputable IT service provider or electronics professional.

"The reality of e-waste is that it includes a whole lot more than just smart devices," explains Liebenberg. "The South African Department of Toxic Substances Control includes televisions, monitors, smart displays, tablets, laptops, printers, radios and more. Other devices like toner cartridges, LED lighting tubes and globes, equipment that has a computer chip driving their operation all fall into this category."

When it comes to electrical tools

and machinery, there can be hazardous and toxic substances involved, such as lithium-ion batteries that should always be destroyed in a controlled environment. "Construction equipment and powertools can include heavy metals like lead, mercury, and cadmium in their construction – these leach into soil and water and contaminate the environment," says the digital expert, who adds, "Electronic devices contain valuable materials like gold, silver, copper and rare earth metals that can be recovered. This reduces the need for new mining and extraction. Manufacturing electronics requires a significant amount of energy, so proper recycling and refurbishment can save energy compared to producing new items, reducing overall emissions. In addition, e-waste management supports a growing industry of recycling and refurbishing electronics, creating jobs and economic opportunities."

If you have not already planned your e-waste disposal, now is the perfect time to begin. "It is crucial to take proactive steps toward responsible disposal. This may include recycling, refurbishing and selling, or donating equipment and tools," says Liebenberg.

Companies need to understand the consequences if assets are not recycled responsibly, including how they will impact sustainability, carbon emissions and the environment. "It is everyone's responsibility to prevent toxic and hazardous chemicals from affecting the earth. The right partner can help you develop an appropriate and granular waste management strategy, find a reputable disposal and recycling company, or help repurpose devices by making sure they are delivered to the most appropriate recipient," concludes the tech manager.

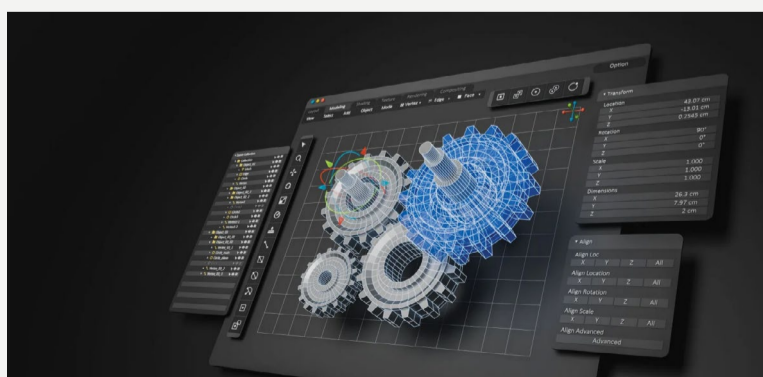
Enquiries: [www.silver-moon.co.za](http://www.silver-moon.co.za)

fast-track the process will be essential. Using AI means we will be able to get more projects to shovel-ready status and commissioning phase quicker, helping to bridge this gap, but it will not replace the role of people."

The energy industry is physical, so there will always be a need for engineers, technicians, contractors

and everyone else involved. "Using AI will make all these jobs easier and increase efficiency. Bringing AI into the renewable energy space will help create new jobs and opportunities while augmenting the roles of existing players in the space," concludes Sookhun.

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





## Measuring light enlightens your work

A light meter is an essential tool for any electrical contractor, whether you realise it or not. Using a tool such as Major Tech's MT940 light meter, available from electrical wholesaler ARB,

gives added knowledge and information on a jobsite that would otherwise be impossible to guess. Here are a couple of reasons to always have a light meter in your toolbox...

### 1. Accuracy in lighting design

Electrical contractors use light meters to measure the intensity of light in different areas of a building or outdoor space. This is crucial data for designing lighting layouts that meet specific requirements for illumination levels,

ensuring optimal visibility, safety, and functionality.

### 2. Verification of lighting standards

Many building codes, regulations, and industry standards specify minimum lighting levels for different types of spaces, such as offices, commercial buildings, and outdoor environments. Electrical contractors use light meters to verify compliance with these standards, ensuring that lighting installations meet legal and safety requirements.

### 3. Troubleshooting & maintenance

Light meters help contractors identify issues such as uneven illumination, flickering lights, or malfunctioning fixtures. By measuring light levels at different points, contractors can pinpoint areas of concern and diagnose potential problems, facilitating troubleshooting and maintenance tasks.

### 4. Energy efficiency

Monitoring light levels lets contractors assess the energy efficiency of a lighting system. By identifying areas of over-illumination or under-illumination, contractors can recommend adjustments such as retrofitting with energy-efficient fixtures, installing dimmers, or optimising daylight harvesting strategies to minimise energy consumption and reduce operating costs.

### 5. Quality assurance

Light meters enable electrical contractors to conduct quality assurance checks on lighting installations, ensuring that fixtures have been installed correctly and are operating as intended. By measuring light output and uniformity, contractors can verify the performance of lighting systems, identify any deviations from specifications, and rectify issues before they escalate.

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



## Fluke highlights the importance of minimising energy waste

With South Africa's energy supply having been under the microscope for more than a decade thanks to loadshedding, minimising energy waste has never been more important. Fluke, a leading US brand imported and distributed by Comtest, has a product that analyses your power supply and provides important information on how to solve issues.

Eric van Riet, Strategic Support & Training Manager at Fluke Netherlands, says, "No matter what industry you work in, looking for energy savings means looking at your power consumption rates and developing a power quality management energy-saving plan." This can be conducted with the Fluke 1777 Three-Phase Power Quality Analyser.

### Benchmarking energy consumption

A power management plan can only be put together once a benchmark has been set. "You will need to investigate and document your current electrical energy consumption across the facility. Through that initial survey, you can look for immediate solutions to implement, like areas that are typically closed on the weekends and can be shut down," says Van Riet. "Track areas that contribute to energy usage outside of your important working assets, such as supplementary electrical heating, lighting being left on, and computers not being switched off despite not being in use."

These immediate solutions will contribute greatly to energy wastage being minimised, with the Fluke 1777 being used to investigate wastage on a deeper level. "This equipment provides measurements that greatly help with assessing your system and to identify losses and quality issues in your electrical energy supply," adds the Fluke expert.

### Advanced power quality considerations

It is no secret that there is unavoidable energy loss in a system – some of the energy is dissipated as heat. But for the rest of the energy, there are myriad tools to mitigate energy waste. "An important area to focus on is the use of conductors – this is where heat waste is the highest," says Van Riet. "There are two possible solutions that can be implemented here: Reduce the current flow so there are fewer kilowatts flowing through the system, or reduce the resistance in the system."

However, these solutions each create their own problems. If you lower the current going through your system, the load will not operate correctly. Reducing resistance meanwhile could have greater cost implications as you will have to install additional copper or aluminium conductors

To remedy these situations, you can look at your conductor sizing. "Following the National Electric Code (NFPA 70 or NEC 100) gives a lot of guidance toward the size of a conductor, describing the ideal conductor size for almost any circumstance," says the electrical specialist. The primary consideration for correct conductor sizing is ensuring the safe operation of the conductors with the most appropriate insulation. This depends on the length, cross-sectional area, and anticipated current rating required. "This can provide minimised energy losses, typically 2% or less, and an acceptable voltage drop in the conductor," adds Van Riet. Some additional possibilities would be installing higher efficiency loads and considering checking to see if motors might be oversized for the current application.

### Wasted power

Just because you have installed updates and upgrades does not guarantee that your wastage has been eliminated, explains Van Riet. "Over time the equipment may change with additions or adjustments, moves and age can significantly affect waste energy. Key areas where energy waste may occur are related to your power quality: Voltage regulation, harmonics, power factor and unbalanced loads."

Voltage regulation works to reduce energy consumption in voltage-dependent loads. It reduces or controls the voltage levels within the equipment manufacturer's specifications to return energy savings. As more efficient loads are installed

at a transformer, the voltage in the system may rise or be incorrectly controlled. The Fluke 1777 can identify transient voltages and voltage imbalance which can lead to failure, unplanned downtime, and expensive repairs.

Harmonics distort the voltage and current so that the ideal sine wave for voltage is not maintained. One of the most recognised effects of harmonics in electrical systems is the excess heat they create in the conductors carrying them. This results in overheating in phase and neutral conductors, known as 'triplen harmonics'.

The additional heat causes cable runs, motor windings, and transformer issues. The overheating can cause significant damage or complete failure, either of which could lead to an unbalanced load, unplanned downtime and expensive repairs.

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



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## Pratley's world-first corrosion-resistant flameproof junction box nominated

The world's first polymeric, corrosion-resistant, direct-entry, flameproof junction box from Pratley has been nominated for the 2024 HazardEx Awards in the category of Technical Innovation, reveals Eldon Kruger, Marketing Director at Pratley.

"Our Flameproof Ex d Envirobox junction box is a major milestone for the electrical hazardous areas industry. It is a new product unlike any other in the world," says Kruger. "Flameproof equipment is designed to ensure that internal ignition within a flammable atmosphere is prevented from transmitting outside the protective enclosure. However, all traditional direct-entry flameproof junction boxes made from steel, cast iron or aluminium materials can be prone to corrosion over time when used in harsh environments."

Pratley's junction box is constructed

from a specially formulated, robust engineering polymer, and it has been designed to withstand severe environmental conditions. "It is ideal for use in areas with a high risk of corrosion, such as offshore oil platforms, underground mines, and petrochemical plants, and many more," says Kruger, adding, "The specially formulated, robust engineering polymer is unique to Pratley. The material has exceptional mechanical properties such as strength, stiffness, creep, dimensional stability and more. This ensures that the box can withstand 2x 20-joule impact tests in a staggering -40°C environment."

As with all of Pratley products, the Flameproof Ex d Envirobox junction box has been third-party tested. During the tests, it reached 4 000-kilopascal internal pressure.

Additionally, it is IP66/68 certified for continuous underwater depths of up to 300m, making it water, dust and gas tight. The lid and base also have an accurately machined flamepath.

"The junction box can be supplied with either 4x 20mm or 25mm entries or smaller on request. It can accommodate Pratley Ex d flameproof cable glands and accessories, and is therefore exceptionally versatile," explains Pratley's Marketing Director. "Each box is supplied as a standard two-way box with 2x flameproof blanking plugs."

The internal bosses are drilled and tapped to provide an earthing point for terminal mounting rails or earth lugs. These are electrically connected to the box entries to provide complete earthing continuity.

Kruger adds that the box is best combined with other Pratley products. The boxes can be fitted with an N35 terminal rail, a Pratley patented Cranked rail, an inverted Cranked rail, or Piggyback rails. Pratley Kwikblok terminals and pre-cut lengths of cable with glands can also be factory



fitted to customer requirements. It has an optional external earthing point and is supplied with 4x M6 Nuts and washers, as well as a 1x M6 Spring washer. The box has threaded mounting M5 holes and can accommodate an indexable mounting plate that can be purchased separately if required.

"Pratley's goal was to produce the only direct entry junction box that is corrosion resistant. The launch of the Flameproof Ex d Envirobox marks yet another word-first product for Pratley," concludes Kruger.

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



## RS Pro boosts product catalogue with 1 900 new offerings

Service solutions expert RS Pro has added some 1 900 new items to its already vast range of tools, industrial and engineering equipment. "We are always looking to boost our service and products for our customers," says a spokesperson. "We have well over 70 000 items, and we are adding all the time. This new batch addition includes everything from high-quality electronic and electrical components, to connectors, passives and the latest test and measurement equipment."

The expansion is part of the company's ongoing efforts to maximise customer satisfaction. "RS Pro strives to be a one-stop shop. Our list of products and range of industries that we cover speaks volumes," adds the spokesperson, explaining that the products and machinery they supply has been "specifically curated for professionals engaged in R&D, PCB development, equipment and machinery design, and production line engineering. The electronics engineering range stands as a

testament to RS Pro's commitment to providing high-calibre components and precision measuring instruments of the highest quality".

The company does more than just supply products - it guarantees performance by ensuring the products have undergone the most rigorous of test protocols and comply with industry standards. "One of our requirements is the capability of the product to perform at the highest level, while providing complete solutions," says the company. RS Pro has also made sure that it carries a high level of stock availability so that customers can find everything they need in a simple, efficient, and straightforward manner, all under one brand.

"Our expanded range encompasses the following electronic products: Resistors, capacitors, inductors, circuit protection, industrial and AV connectors, fuses, LED indicators, electronic test and measurement, soldering equipment and more," says the spokesperson.

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

## Three-D Agencies gives you a look inside with the M30 thermal camera

Safety is of critical importance when it comes to working with electricity and in an electrical environment, which is why local distributor Three-D Agencies has highlighted its Hikmicro M30 thermal imaging camera as a must-have tool for any contractor. "Heat is a factor that is often overlooked in the electrical industry," says Ian Downard, a founding member of Three-D Agencies. "The M30's laser system allows users to stand at a safe distance and immediately get an accurate reading on the thermal conditions of a room or machinery and infrastructure that they must work with. That provides users with knowledge to make informed decisions about what they need to do, while maximising their safety."

The handheld thermography device is one of the best on the market, having a measurement range of -20°C to 550°C, and an accuracy range of less than 2°C in variance. "The M30 is lightweight at just 660g and has ergonomic grips that make it easy to handle in any situation without causing user discomfort," says Downard. "When you are in testing situations, you want to trust your equipment and tools, and you want to be able to operate them in a safe manner."

The device has a 640x480 pixel 3.5-inch high-resolution display that is easy to read thanks to the Adaptive AGC, DDE and 3D DNR processing capabilities, while a picture-in-picture preview gives the user incredible amounts of information with the press of a button. "The LCD touch display makes it easy to operate as there is no fumbling with buttons. Data that is being measured is instantly available, and users can immediately get to work with the repairs or maintenance," says Downard.

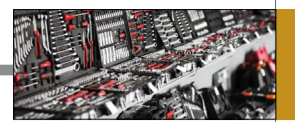
The M30 has an incredibly sensitive image processor that has an infra-red resolution of more than 110 000 pixels and Super-Infra-Red resolution of more than 440 000 pixels. The unit can measure several spots, such as Centre Spot, Hot Spot and Cold Spot, as well as 10-point user-defined spots. "The M30 can store up to 100 000 images on a removable 64GB micro SD card that can be expanded with a bigger card," continues Downard,

adding, "Users can also record up to 54 hours of video footage in MP4 or radiometric format."

The thermal camera features 802.11 b/g/n wireless networking capabilities, as well as Bluetooth 4.2 connectivity. The lithium-ion battery is recharge from flat to 100% in four hours via USB-C charger, and it will operate for four hours on a charge. "The M30 should be in every contractor's toolbox. It is a high-performance tool that will give you accurate measurements when you need them most," concludes Downard.

Enquiries: [www.three-d.co.za](http://www.three-d.co.za)





## Heat-shrink tubing seals loose connections

The importance of heat-shrink tubing in electrical work cannot be overstated. This seemingly unassuming component serves a crucial function in ensuring the integrity and safety of electrical connections, offering benefits that are indispensable to various applications. Manufacturers like HellermannTyton have perfected this tool, which is sold separately or as kits, and using their products give you peace of mind that your work is safe and secure. Here is a reminder of why heat-shrink tubing is so important in electrical work.

### 1. Electrical insulation

At its core, heat-shrink tubing serves as a protective insulator for electrical connections, shielding them from environmental factors such as moisture, dust, chemicals, and mechanical abrasion. By encapsulating wires and terminals with a durable polymer material, the tubing creates a barrier that prevents short circuits, corrosion, and other forms of damage that can compromise an electrical system.

### 2. Sealing & waterproofing

One of the primary advantages of heat-shrink tubing is that it creates a watertight seal around electrical components, making it ideal for applications in outdoor or harsh environments. By shrinking tightly around wires and connectors when exposed to heat, the tubing system forms a protective barrier to seal out moisture and prevents ingress of water, thereby safeguarding against electrical malfunctions and potential hazards.

### 3. Mechanical strain relief

In addition to providing electrical insulation,



heat-shrink tubing offers mechanical strain relief for soldered or crimped connections, minimising stress on wires and terminals caused by vibration, flexing or tension. By evenly distributing mechanical forces along the length of the tubing, it helps prevent wire fatigue, conductor breakage, and premature failure.

### 4. Easy identification

Beyond its protective and functional pluses, this type of tubing serves as a valuable tool for organising installations. Available in various colours, sizes and labelling options, it allows engineers to colour-code wires, mark connections, and provide clear identification of circuits, components, and terminations, facilitating troubleshooting, maintenance, and repair tasks later.

Heat-shrink tubing is an indispensable component in anyone's toolkit, allowing for the design and implementation of robust and resilient electrical systems across a diverse range of industries and applications.

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

## WORX circular saw makes light work of cutting

There is no need to lug a heavy circular saw around a congested jobsite. China-based tool specialist WORX has designed a compact circular saw that powers through any cutting job. The WX527.9 is lightweight at just 1.45kg, but it provides supercharged performance with plunge, cross and rip-cut actions suitable for a number of materials.

The WORX saw has been developed with an ergonomic soft-touch, easy-grip handle that allows for single-hand use by either left- or right-handed operators, and it saws cleanly through every material from wood and plasterboard, to tiles and metal. There is also an accurate built-in depth adjustment measure which ensures clean groove cuts that are perfect with every slice.

The saw has a performance load speed of 15 000 rpm, and a maximum cutting depth of 27mm. You can use any suitably sized cutting disc up to 85mm, powered by a brushed 20V



motor. The WX527.9 saw forms part of WORX's PowerShare platform, which means the 20V battery recharges in minutes rather than hours, and you are able to hot-swap the battery with other WORX PowerShare tools without compromising performance.

The WX527.9's small size and lightweight design makes it perfect for any job on the worksite, no matter how tight the space. There is also an auto-off braking system that stops the blade in milliseconds should the operator's hand come off a trigger, thereby increasing safety on the job-site, and making WORX a trusted tool partner.

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

## Hager's quadro evo: Evolution is with you

The electrical distribution landscape is ever-changing, demanding solutions that are not just reliable but also adaptable and efficient. Hager's latest offering, the quadro evo main distribution board (DB board), brings revolutionary advancements to the South African market thanks to Hager's business relationship with electrical distributor ElectroMechanica.

At first glance, the quadro evo may not seem drastically different from its predecessors. However, the real changes lie beneath the familiar exterior. Hager has focused on refining existing functionalities and introducing key improvements to enhance user experience and overall performance.

This tested solution from Hager fully complies with IEC 61439-1&2 standard, handling up to 4 000A. The quadro evo now provides four safety classes, catering to projects of any size. It is a versatile solution capable of tackling almost any challenge, with numerous improvements making it the cornerstone of any distribution system.

### Key Improvements

- A solid grounding: The quadro evo sets a new standard by simplifying the process of choosing, configuring, and building electrical distribution systems.
- Enhanced safety: With multiple safety levels, including liability, independently tested and approved to the latest IEC standards, the quadro evo ensures safety and reliability.
- Systematically better: Delivering on peak performance, consistent quality, and efficiency, the quadro evo is backed by a reliable partner, guaranteeing excellence in every detail.

- Easier assembly: The assembly process is streamlined for speed and efficiency, requiring less manual labour and offering hassle-free maintenance.
- More possibilities: Designed for ongoing evolution, the quadro evo remains open to future technological advancements, ensuring flexibility and adaptability.

These enhancements impact various stakeholders, specifically benefitting:

- Electrical installers: The quadro evo ensures the swift installation with pre-assembled modules, it adapts to any project with its flexible design, and delivers reliable service thanks to robust construction.
- Panel builders: Streamlining planning with pre-configured options, simplifying assembly with snap-on components, and allowing for on-the-fly adjustments, the quadro evo reduces manual labour and ensures long-lasting durability.
- Electrical consultants: Facilitating easy maintenance with clear access points and pre-assembled components, the modular design enables seamless adjustments to meet the ever-changing demands of dynamic environments.

The quadro evo epitomises the evolutionary progress within Hager's main distribution board offering. With its emphasis on modularity, safety, efficiency, and user experience, the quadro evo holds immense potential to revolutionise various aspects of electrical distribution for stakeholders across the board. As we advance, it is evident that the quadro evo is positioned to fulfil its promises and establish itself as a true industry innovator.

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

NEW

Introducing more possibilities

# quadro evo.

The New Hager Main Distribution Board

A tested Hager solution, fully compliant with IEC 61439-1&2, up to 4000 A, quadro evo now offers 4 safety classes. With segregations 1, 2b, 3b or 4b, there is a solution for projects of any dimension. The new quadro evo is a solution that will meet almost any challenge. Its many improvements make it the base of a main distribution that will endure. Choosing, configuring and building the quadro evo is now easier and more efficient.



**01** Outside, the familiar Hager look. Inside there's plenty more to see.

**02** New capabilities and more intelligence.

**03** New form segregations for up to 4b and new safety features.

**04** Ready for an all-new power busbar, allowing systems for up to 4,000 A.

**05** The new design allows for more space, making wiring and maintenance easier.

**06** Improved mounting kits, fewer screws and a clear positioning.

### hagercad software

A fully integrated, electrical planning software from Hager, offering maximum simplicity, speed, reliability and flexibility.

Automatic power loss and heat calculation feature

Quickly generate circuit diagrams

Simply generate your terminal plan

Easily create and share your project

User-friendly function for device labels

Greater accuracy for cabinets calculations





Scan to learn more about the quadro evo solution



Download hagercad and Stand a Chance to Win a Hager branded leather travel bag.






## ACDC provides energy supply that moves on the jobsite with you

**E**lectrical tool, machinery and equipment distributor ACDC Dynamics has a series of mobile backup units that are perfect for moving around the work site when there is either a power outage or no electrical supply to start with.

The company offers various units and models, ranging from the handheld PBU-MS-150 rechargeable 230VAC 162Wh at the bottom end, through to the DP1000IL, a 1 000W 2 048Wh system with UPS function, complete with a wheeled construction to make it easy to move around the site. Pricing ranges from R3 000 up to R24 000 for the units, so it is important to choose the backup that meets your electricity needs and budget.

Here are a couple of tips to keep in mind when choosing the correct portable backup system for your business:

### 1. Determine your power requirements

Identify the critical electrical loads your business needs. These include essential equipment, lighting, HVAC systems and any other devices crucial for business operations. Calculate the total power in kilowatts that these loads would require.

### 2. Consider load growth & expansion

Anticipate potential load growth and expansion. Choose a backup supply that can accommodate your current power needs and provide some additional capacity for future growth. This ensures that your system remains relevant as your business expands and you add tools and equipment to your work environment.

### 3. Determine how long you need the backup to run

This influences the size of the backup system, including in some instances the size of fuel tank and type of fuel (both petrol and diesel systems are available). Some businesses may require only a short runtime until utility power is restored, while others may need longer runtimes.

### 4. Automatic Transfer Switch (ATS)

An ATS is essential for seamless transition between utility power and backup power. It automatically detects a power outage and switches the electrical load to the backup system. Ensure that the unit you buy is compatible with a reliable and appropriately sized ATS.

### 5. Maintenance requirements

Assess the maintenance requirements of the backup system that you have identified for your business.



Each type of backup system comes with its own unique maintenance requirements, which could include repacking the batteries, replacing cables and more. Choose a unit that will be economical to service, as well as somewhat easy in terms of swapping out replacement components.

### 6. Budget

Establish your budget that includes the initial purchase, fitting, as well as ongoing maintenance. While upfront costs are essential, consider the total cost of ownership over the system's lifespan.

### 7. Supplier reputation & support

It is always important to choose a supplier who offers great service as well as professionalism. ACDC Dynamics has a history of being a reputable supplier who takes care of clients pre- and post-sales. This provides peace of mind knowing that should there be any queries, questions or issues, ACDC Dynamics' friendly staff are on hand and ready to assist.

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

Continued from page 1

## APEX launches revolutionary control & monitoring operating system for renewable energy management

monitoring and control, as well as device configuration. This helps when the internet is either not available at all or is temporarily down – it allows you to still be in control.

When asked if this technology can be used if a client is using non-APEX hardware, Roche responds, "We have developed a hardware solution for that – we call it our 'EDGE' device. It is agnostic, so we can connect it to many popular brands – inverters, batteries and gensets can benefit from many of the same features."

### Proudly South African

ApexOS is designed, coded and tested in South Africa. "Our team designed the software to perform tasks and functions that a couple of years ago were unheard of," says Roche. "We started designing ApexOS for our geyser controller originally. It took about two years' worth of coding at our head office in Cape Town. Our cloud development team is based in Port Elizabeth, and it has been a massive collaborative effort."

What sets ApexOS apart is that it is firmware – software resident on the microcontrollers of the device. "All of our new generation products, whether commercial or residential, now run ApexOS," says Roche, adding, "What may be different, though, is the APEX cloud interface, depending on the device. For example, a geyser controller has an end-user-friendly interface, while the microgrid controller has a more engineering-centric layout."

To make the most of this product, Roche adds that "understanding the basic features such as fleet control, VPP participation, and secure communications will enable installers or resellers to effectively promote this technology for use in projects with these needs".

### Staying up to date

Users can easily stay up to date with upgrades, says Roche. "When there is a new feature, for example, you will get a notification, or you can configure your system to automatically download and install updates. Software design does not stand still – we continually develop it, and we add new functionality all the time. If there is a security patch or critical update, we will probably push it automatically to devices."

Roche concludes, "ApexOS combined with APEX Cloud Services is a massive step forward in terms of function and operability, and we think that it is going to make working with our devices not only easier, but more fulfilling as users customise their homes and offices to deliver the best experience possible."

Enquiries: [www.apexsolar.tech](http://www.apexsolar.tech), [www.rubicon.tech](http://www.rubicon.tech)

## Legrand leads energy efficiency control with smart electrical panels

**L**eading electrical manufacturer Legrand is helping users in a time where energy supply continues to be constrained and the cost of electricity seems to be spiralling out of control. "Legrand's Smart Electrical Panel with Netatmo offers a solution," says Legrand South Africa. "This complete system is ideal for private residences and provides reliable control over electrical installations and effective tracking of energy consumption."

### A single app for comprehensive control

The components in Legrand's system are fully compatible with Arteor with Netatmo wiring devices, and just like Arteor with Netatmo, users need to begin the installation with a gateway module – the 'brains' of the operation. "This system is available in both a DIN rail mount version or Arteor with a Netatmo gateway kit. The gateway acts as an interface between the router and the connected products. Modules available for the Smart Electrical Panel include a smart connected electricity meter, a 16A smart lighting latching relay

and a 20A Smart contactor," adds the company.

The Home+ app is available on both Google Play (Android) and Apple App (iOS) store. It allows users to intelligently control their home or office by managing all electrical aspects remotely from anywhere in the world, or by voice command through their preferred voice assistant. (Google, Apple and Amazon). "With the integration of smart speakers, users can talk to their home and give instructions like, 'Google turn on my security light' or 'Hey Siri, turn on the pool pump'," says Legrand.

### Assisting with Eskom's 'load limiting'

Implementing Legrand's Smart Electrical Panels is a strategic response to Eskom's newly implemented 'load limiting' initiative. When Eskom reduces the load, the Smart Electrical Panel allows users to selectively turn off high-consumption loads, such as electric geysers, to ensure uninterrupted power for essential devices.

The panels also assist with the monitoring and reduction of energy consumption, says the company. "The connected electricity meter is key for monitoring energy use. It provides detailed insights into the building's

total electricity consumption history, enabling users to track usage on a daily, weekly, monthly, or annual basis. This data is crucial for identifying high-consumption devices and improving energy efficiency."

### Advanced control

Legrand's Smart Panel features a revolutionary connected latching relay that allows for expanded lighting control. This device integrates seamlessly into wireless switches in the Arteor with Netatmo range, allowing users to control lighting remotely and to set up personalised schedules, while also monitoring consumption.

"For high-energy consumption appliances, the connected contactor offers both local and remote control, including operation in peak/off-peak automatic modes, or as a conventional on/off power contactor. This ensures efficient management of devices like electric geysers and swimming pool pumps," says Legrand.

The company's extended commitment to fostering Smart, energy-efficient homes in South Africa is evident in these types of user-friendly systems that are enhanced by comprehensive technical support and advisory services throughout Southern Africa. "Legrand's Smart Electrical Panels with Netatmo home control solutions are more than just a technological advancement; they are a step towards a more sustainable and energy-efficient future, aligning perfectly with initiatives like Eskom's load limiting schedule, to create smarter, more resilient building," says Legrand.

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





## Microgrids could be tomorrow's energy solution... and they are here today

Last year was a learning curve for South Africans and South African businesses as we discovered just how robust our troubled energy grid is. "The country and, in fact, the world, are at historic juncture with business and consumers alike implementing alternative energy technologies to meet their daily demands," explains Nishandra Baijnath, Systems Architect, Power Systems, Anglophone Africa at Schneider Electric. "One such alternate energy avenue that has tremendous potential is the microgrid."

By definition, 'a microgrid is a group of interconnected loads and distributed energy resources that act as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Microgrids can improve customer reliability and resilience to grid disturbances'. These systems offer numerous capabilities that benefit specific energy goals and resultant business strategies.

"Microgrids have the potential to meet the needs of various industries and sectors. They allow businesses to generate electricity on-site, use it when needed, and potentially sell excess power back to a relevant utility," says Baijnath. That generation ability is where businesses will benefit most as they will be able to bypass the national grid for their energy demands. Instead of relying on state-

owned utility Eskom for power and then having to operate around loadshedding and unscheduled outages, "On-site renewable energy resources, such as wind farms, solar panel arrays, and battery storage systems, take these variable costs out of the equation," adds the energy specialist.

The biggest problem that large-scale businesses and energy consumers face in South Africa is that most of their power purchase agreements cannot guarantee the rate they will pay for electrical consumption, nor is the power supply from Eskom close to being stable. Using a microgrid would mitigate these issues, while also being a cost-effective alternative and/or addition to a business's energy mix. "Enterprises that establish their own on-site energy resources can become more self-reliant and less vulnerable to the unpredictable forces affecting energy costs," adds Baijnath.

### Seizing energy control

As an example, power suppliers categorise commercial buildings based on their peak demands. If a business is identified as a tier-2 customer, with a potential 10kW peak demand, the utility must be prepared to supply that operational demand.

To meet an expanded demand, the power utility would need to expand the grid. This can be achieved by adding substations, installing more infrastructure, upgrading



existing networks and systems – and right now this is simply not going to happen.

"There is the added issue of businesses commonly being placed in a tariff bracket with a higher allocated peak demand, irrespective of their actual loads," explains Baijnath. "This leads to higher monthly energy bills. This base cost for the allocated peak demand is in most cases more than the effective power consumed by the business in question."

This is the perfect scenario for the creation and implementation of microgrids, says the energy expert. "When implementing a microgrid, service providers will work closely with customers to identify essential and non-critical loads. Microgrids allow businesses to implement a strategic load management plan which, in turn, reduces the peak demand that is being made of the power utility." For example, if your peak demand is 6kW due

to simultaneous activation of multiple loads, the microgrid controller system can deliver a staged activation process. "This in turn allows businesses to strategically schedule the activation and deactivation of loads, thereby lowering overall energy costs due to system optimisation and a now-efficient consumption model," says Baijnath.

Peak demand is a key component of an organisation's allocated tariff, and by managing it effectively, businesses can position themselves in a lower-cost bracket. "In a time when energy efficiency is at its most critical due to factors like loadshedding and an unstable grid, the solution to saving the economy and maintaining the industrial sector could be right under our noses," concludes the energy expert.

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

## Finance your solar PV system without breaking the bank

Loadshedding is more than an inconvenience – it is holding back South Africa's economic recovery plans and killing businesses. That is why so many people and organisations are turning to solar photovoltaic (PV) systems to mitigate the power outages that have been crippling the country for almost 15 years. Ross Mains-Sheard, Chief Executive Officer (CEO) of solar specialist Versofy Solar, says that even when you choose a solar solution, "You need to be careful and make sure that you are choosing the correct solution to meet your requirements."

"The size and capacity of your solar PV installation depends on the size of your house and your family or business, but even for the most modest building, the capital outlay for the panels, inverter and batteries can be substantial, and not everyone is able to buy a system outright," says Mains-Sheard, whose company has introduced new offerings this year. "Versofy's Solar-as-a-Service (SaaS) and rent-to-own packages put solar within the means of more and more households and businesses." He adds that all Versofy products come with full service, insurance and maintenance plans. "This is to ensure that the upkeep and technical support for your solar system hassle-free," explains Mains-Sheard.

### Light up your life

"SaaS is Versofy's pure solar system rental product where there is no ownership of the system. The installation, monitoring and support are included in the monthly rental cost," says the CEO. Versofy also offers a rent-to-own solar option that is

like a cellphone contract. "Once the contract period has expired, the solar installation is yours. You can enjoy the benefits of monthly financial savings, and later owning the system after the contract is up. The key here is the flexibility and options you have: You can either upgrade and keep renting the system, cancel the contract, or even transfer it to the new owners or tenants of your house if you are moving," he says.

As with a cellphone contract, purchasing or renting a system from Versofy is straightforward. "Customers will undergo a credit check," says Mains-Sheard. "Before applying, there are a few things you can do to ensure the application process goes smoothly."

Your credit score considers how often you apply for credit, including store cards, cellphone contracts, car financing and credit cards, and whether you are making your repayments on time. Defaulting on monthly repayments could have a negative influence on your credit score, which makes it harder for you to get credit elsewhere. "You can check your credit record at no cost through any registered credit bureau," adds Mains-Sheard.

"Before applying for any contract, it is a good idea to do your own affordability and cost assessment," explains the businessman. "Solar system monthly repayments will closely mirror what you are already paying in electricity bills. By maintaining good power-saving habits, reducing your dependence on the grid and having backup battery power for use during the night and loadshedding, you could substantially reduce your electricity account to balance out your solar payments."

With thousands of projects and



Ross Mains-Sheard, Chief Executive Officer (CEO) of solar specialist Versofy Solar.

installations to its name, Versofy has perfected the application process. According to the CEO, "The online pre-approval process takes place in just 30 seconds. After that, we are uniquely able to move fast on fulfilling your solar needs – the consultants will contact you to schedule an obligation free site visit, and put together a tailored solar proposal. Providing everything is in order with your pre-approval, we can schedule our team to visit your home the very next day. What's more, depending on the size of the system you have selected, installation can take a further two to three days. Once a customer has chosen Versofy Solar, we make it our mission to get them up and running as soon as possible," says Mains-Sheard.

### Quality is the name of the game

When you are investing any money into a project and product, you want to know that you are getting quality for your cash.

When it comes to solar PV systems, large amounts of money are involved, which is why Versofy only works with approved installers and brands of the highest quality. "With SaaS and the rent-to-own options, we are responsible for the system's maintenance, so you can be assured that we only supply the best panels, inverters and batteries that make up the entire collection, storage and generation of solar power," Mains-Sheard adds.

"With a simple application process, transparent requirements, and the assurance of quality service and maintenance, Versofy is making it easier for South Africans to move into the world of solar PV systems with a seamless motion," concludes the CEO. "Embracing solar power in 2024 is not only within financial reach, it is a step towards a more self-reliant future."

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



## Shining a light on Africa's solar trends this year

The renewable energy sector is set to see innovation in 2024 and beyond that will transform the way that energy is accessed, stored and deployed across the African continent, says Paul van Zijl, Group Chief Executive Officer (CEO) at Nigeria-based company Starsight Energy. Here he highlights three key trends that he believes will shape the industry this year.

### 1. Batteries will provide benefits far beyond backup for behind-the-meter projects

One of the most significant shifts in solar technology revolves around the integration of battery energy storage systems (BESS) – especially for behind-the-meter solar (also known as 'on-site solar'). "Traditionally, batteries were seen primarily as backup storage when paired with a solar system, ensuring a steady power supply during cloudy days, night-time or when the grid is unavailable. However, this year the focus is vastly shifting towards load management, where batteries play a dynamic role in optimising energy consumption," explains Van Zijl.

As the trend for battery deployment across the continent grows, cutting-edge management systems will become a key part of solar installations with an integrated battery component. The systems will use advanced algorithms to predict energy demand patterns. "This allows for the strategic use of battery storage – discharging during expensive peak times and charging using solar energy or the grid during off-peak – to reduce the costly demand charges that come with variable tariff structures. Along with enhancing the efficiency of solar systems, integrated battery storage solutions can also contribute to grid stability by reducing strain during high-demand periods," says the CEO.

When it comes to front-of-the-meter (or off-site) storage, BESS is also set to play a bigger role in the deployment of utility-scale renewable energy technology like wheeling, where power is generated at an off-site location, like a solar or wind farm, and transported using the available power network to different off-takers.

"In South Africa, for example, the national energy provider Eskom announced the deployment of around 343 MW in BESS projects as part of an overall 500MW BESS initiative aimed at addressing the country's long-running electricity crisis. The systems will be in remote areas (with limited access to Eskom's network) but still close to renewable energy plants built by independent power producers (IPPs)," says Van Zijl. "This collaboration between the public and private sectors supports more widespread deployment of utility-scale power and the adoption of renewable energy projects. By adding battery storage components to the national grid, businesses and consumers can gain quicker access to reliable electricity while the power utility can address peak energy demands more easily. This also ensures that the increasing amount of power generated from utility-scale solar projects can be stored and consumed outside of daylight hours to avoid stranded grid capacity."

### 2. Data, banking & tourism: The rise of sustainable off-grid solar solutions

Van Zijl says that off-grid renewable energy solutions, including stand-alone systems and mini-grids, offer a unique opportunity to expand modern energy access services. "The distributed nature of these systems allows them to be customised to local conditions, tap into available renewable resources, deliver diverse energy services, and utilise local capacity to ensure long-term sustainability."

This makes these solutions increasingly popular for companies as they provide a cost-effective tool towards minimising expenditure while maintaining business operations, giving the economy a higher chance of success. This will be maximised in three industries:

- Data centres: Africa is a global hub for data centres. According to research from African



Infrastructure Investment Managers, there is around 250MW of installed data centre capacity across the continent – with the demand for centres in Africa expected to exceed supply by 300% by 2030. These powerhouses of technology rely heavily on a steady and safe electricity supply, with off-grid solutions proving to be the best chance of survival

- Banking: While mobile financial services continue to increase rapidly, there is still a tangible need for brick-and-mortar banks and ATMs in countries where access to these services remains essential. "These sites need to remain operational should there be a grid collapse or catastrophic power failures – making an off-grid solution a non-negotiable component of the future of banking in Africa," says the CEO.
- Tourism: With the rise of conscious consumerism and eco-tourism, sustainability is now the differentiating factor for discerning travellers choosing their next holiday destination. "Luxury lodges in popular African destinations are moving towards fully off-grid solar battery operations to offer their guests uninterrupted access to power while boosting the lodge's green credentials in the process," explains the businessman, adding, "As more businesses become aware of the benefits of off-grid solar, it is likely that we will see an even greater adoption of this technology in 2024."

### 3. Seamless access to renewables through a reimagined aggregation model

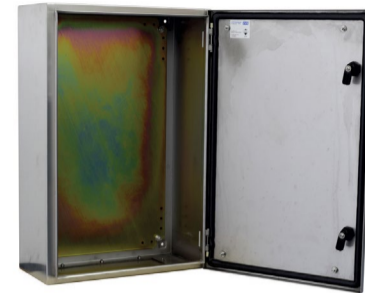
We will certainly see a shift towards aggregated solutions, wherein energy providers will consolidate diverse technologies and services into comprehensive packages in 2024. This trend is driven by the recognition that a holistic approach to energy solutions is not only more convenient for consumers but also more effective in optimising energy production and consumption.

Van Zijl says that this can be done in several ways. "An example would be trading of electricity in South Africa, which allows a service provider of solar energy to buy and sell excess wind energy without having to invest substantial capital expenditure amounts. Similarly, instead of having gas-powered energy compete with renewable energy, the aggregation model will also allow providers of such services to aggregate their energy solutions and provide the client with a holistic offering. The goal is to provide consumers with a seamless and integrated final product that maximises the benefits of renewable energy across various aspects of their daily lives. The real value for customers lies in a collaboration of providers who can meet their specific needs and power the entire energy lifecycle."

"The future is bright. If 2023 was anything to go by in terms of transformation for the energy sector, 2024 will be marked by accelerated innovation and a collective commitment to harnessing the full potential of renewable energy that holds the promise of a more resilient, more sustainable, and more tightly connected energy future for Africa," concludes the Starsight Energy CEO.

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

## Heavy-duty CRX steel enclosures add safety & security to electrical supply



Leading distributor Waco Electrical has the full range of sturdy CRX enclosures available in a polished hairline stainless steel finish. "We have recently revamped our Call-and-Collect service that has made it easy to order parts, like these enclosures, and to be able to collect them within two hours," says Ravinash Naidoo, the Marketing Manager at Waco Electrical. "Our customers have access to thousands of products and materials. Our warehouses are enormous, and we have plenty of space to stock products the size of these enclosures, so we are always able to fulfil orders with minimal fuss."

It is no secret that electricity is dangerous, and every precaution should be taken when working with power, as well as with the operation of electricity. For that reason, these CRX enclosures are made to the most stringent of specifications. The enclosures, which range in size from 300mm x 250mm x 150mm to 1200mm x 800mm x 300mm, measure between 1.5mm and 2mm in thickness in body and door construction. The enclosures have a protection rating of IP65, which is the highest level of dust protection, and they can withstand low-pressure water jets from all directions. With this safety rating, you have the peace of mind that the electrical connections and equipment being housed within the enclosure are fully insulated from environmental factors that could contribute to problems and failures.

The enclosures are supplied with base plates and gland plates, as well as locks and keys. This means you will not have to buy extra components and materials when you want to install the enclosure. "We are proud of being able to supply products of the highest quality and standards to our customers," concludes Naidoo.

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

## Non-conductive sealing resin: Electricity's unsung hero

Insulating resin is increasing in popularity as a sealant due to its non-conductive properties, says sealing and coating specialist MasterBond. While little has changed for the product, there have been ongoing advancements and trends in resin formulation, application techniques, and product innovation, such as:

Enhanced thermal stability: Developments in chemistry have focused on improving the thermal stability of non-conductive resins, allowing them to withstand higher temperatures.

High-performance formulations: Resin manufacturers are continually developing high-performance formulations. These updates offer enhanced durability, reliability, and longevity.

Environmentally friendly options: There is growing demand for non-conductive resins that are formulated with low volatile organic compound (VOC) content and environmentally friendly additives. Manufacturers are exploring alternative raw materials and production processes to reduce the environmental impact.

Improved dispensing and curing methods: Advancements in dispensing and curing methods for resins have led to more efficient and precise application techniques. Automated dispensing systems, robotic dispensers, and UV curing technologies enable faster production cycles, higher throughput, and tighter process control.

Compliance with industry standards: Resins designed for electrical insulation applications undergo testing and certification to verify their performance characteristics, dielectric strength, flame resistance, and compatibility with other materials.

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



## ILLUMINATING THE INDUSTRY WITH ANDREA

## OEM Presentation vs Reality: Deciphering the numbers



**OPINION PIECE:** Andrea Barausse is the founder and managing director of Durban-based lighting company Energywise Systems. In 2023, he was elected as the technical chair of IESSA – the Illumination Engineering Society of South Africa.

When evaluating lighting fixtures, it is common to rely on the data provided by Original Equipment Manufacturers (OEMs). However, there is a significant, measurable gap between the OEM presentations and the reality of a product's performance.

There are two traps to watch out for.

Trap 1: Lack of Driver Loss Inclusion

Many OEM data sheets do not include driver losses. How could they? The driver manufacturers cannot possibly know how the final manufacturer will use their driver, what heatsink will be applied, what kind or quality of LED will be used



in the assembly, or ultimately even the light's final application, to name a few of the dozens of variables. For accurate evaluations, it is essential to account for these losses in your assessments. It is not an exaggeration to suggest that if you are working through driver readings without these losses accounted for, you are dealing in fiction and not fact.

Trap 2: Max LED mA is not guaranteed. The maximum LED milliampere (mA) rating is not a guarantee of performance. Instead, it represents the maximum permissible value. Understanding the actual performance of a light requires the consideration of factors such as temperature and optical system efficiency. And the only way that we can understand these is to test the final product in its totality and produce measurements based

on this testing protocol. Yet many of us in the field use mA as a benchmark against which we compare two light fittings. You can quickly see why someone using OEM data for this might appear higher than someone using actual data, and why this is like comparing apples to oranges.

Simply comparing two fittings based on their raw specifications is not enough. To make an informed decision, you need to:

- Understand the losses mentioned in the Lumen and Temperature Behaviour (L&B) rating. These losses can impact a luminaire's actual performance. Ensure that the manufacturer's data provides a clear image of how these losses affect the fixture's brightness and efficiency.
- Evaluate the optical system being used and whether the light is directed where it is needed. A well-designed optical system ensures that light is effectively distributed, reduces wastage, and improves the quality of illumination. Ask for details about the fixture's beam angle and light distribution characteristics. A pet hate of mine is what I refer to as 'glare bombs'. These are fittings that, on paper, have powerful outputs, but in reality, they are unfocused, unrefined and wasteful luminaires throwing their light where it is not needed, and oftentimes they are proving more of a hindrance.
- Consider whether the fitting is the best choice for the specific application. Factors like wattage, lumens per watt, and price alone may not determine suitability. Assess the fixture's compatibility with your project's requirements, considering factors like

colour temperature, colour rendering index (CRI), and dimming capabilities. Also, and perhaps most important, what is the cost of ownership? Many cheap imports will blow your socks off when you see their long-term costs versus that of their more expensive counterparts. We recently ran a test for a local lighting manufacturer who was competing with a 'cheap and nasty' import product, and we were able to mathematically show that despite the local product costing almost R1 000 more per unit, when cost of ownership was considered, that same luminaire was 40% cheaper over the first three years of life than the import.

By deciphering the numbers and understanding the hidden details, you can make more informed decisions when choosing lighting fixtures for your projects. Remember that an informed choice not only ensures better lighting performance, it also contributes to improved energy efficiency and cost savings over the long term.

When it comes to evaluating lighting fixtures, it is essential to go beyond the numbers presented on OEM data sheets. By delving deeper into factors like driver losses, optical system design, and suitability for your specific application, you can make choices that result in optimal lighting solutions for your projects. Understanding data ensures that your investments in lighting technology are both effective and efficient. Should the company you are dealing with not be able to answer these questions with readily available information and conviction... walk away.

## Ledvance announces new NAV LED filament lamps



Lighting specialist Ledvance is always looking towards tomorrow when it comes to making today's illumination solutions more user friendly. Cue its NAV LED filament range of lamps, using the tagline 'same shape as always, more efficient than ever'.

"Light is so much more than the on-off switch, bright or dark," explains Margaret Maree, Head of Marketing & Design at Ledvance South Africa. "Light gives us the ability to see the things that matter most in life. This new range is seen as a future-proof replacement for traditional sodium vapour lamps (NAV) that have for some time been inefficient, both in terms of performance delivery and energy consumption."

Ledvance's new filament products feature state-of-

the-art LED technology in the design and construction, and they can deliver an impressive efficiency of up to 190 lm/W while consuming up to 60% less energy. "This is a remarkable change in the way they use power to provide light," says Maree. "If you consider that you are saving more than 50% on consumption, you should be able to easily half your lighting bill by replacing your existing NAV lamps with the new Ledvance version."

The NAV LED filament fittings have a tubular full-glass body that allows for 360° light distribution, and they retain the existing fitting mechanism so you will not have to replace the light housings to use them. They are suitable for operation on CCG or 230V mains and are incredibly light. The lamps are available in two

colour spectrums – 4000K and 2700K – and have a protection class rating of IP65, making them fully protected against dust and low-pressure water jets from any direction. They also have a built-in surge protection up to 2kV.

"These products have a life of up to 25 000 hours, and a power factor of 0.9," says Maree, adding, "That makes them one of the best lighting options in their class. They deliver incredible performance while consuming less power. As with other LED fittings, their lifespan has greatly improved over their predecessors, meaning you must spend less time and money replacing failing fittings." That is always an important consideration when it comes to choosing your lighting solutions as loadshedding and power surges are commonplace in our country. While the economy is struggling, the best thing you can do is try to maximise your business operations while reducing your expenditure – these Ledvance filament options will help reduce your energy charges from the second you install them.

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

## Vossloh-Schwabe leads LED advancement with energy revolution products

What does the energy transition mean for LED drivers? According to Christian Lade from Vossloh-Schwabe's Business Development unit, "All LED drivers are inherently energy efficient, but what does the energy transition mean if we want to take it seriously, and where are the weak points?"

According to the illumination specialist, "Solar panels plus a battery, plus an inverter means that there are two times losses during voltage conversion. Only pure DC battery systems can be truly sustainable and efficient. With the further development of batteries over the next few years, the future belongs here."

Vossloh-Schwabe's Blu2Light system has been conceptualised and designed specifically for this scenario, developed as a smart solution that is not only sustainable but one that can also 'think ahead', explains Lade. The Blu2Light DigiLED CC is an LED driver that can be operated with input voltages of 12–48 VDC. The special feature is that even with low battery voltages, for example 12VDC, higher forward voltages required for LEDs can be generated with up to Vf=48 VDC. The driver supports all DC input voltages from gel, to lithium-ion batteries and their specific charging voltages.

This is all achievable with a single device from the lighting giant who is based in Germany. "In addition to converter losses, device variants are avoided, and the use of electronic components is sustainably reduced," says Lade. "The DigiLED CC driver

is therefore one of the most efficient LED drivers available, as losses are avoided from the outset. But would it not be even better if we could also use it to control our LED lighting with foresight?"

Vossloh-Schwabe's DigiLED CC can also be adapted for user requirements. For example, an optional battery monitor can be used to transmit the current battery charge level via a Bluetooth mesh interface that is integrated in the devices. The Blu2Light system then calculates the available energy using load values, which means that the lighting being used can be dimmed more to increase the running time of the overall system so that we are not suddenly left in the proverbial dark.

"If we add the solar weather report to the system via a server, optimised solar operation can be guaranteed for days and even weeks, depending on the size of the system. Conversely, this means that the necessary batteries can be significantly smaller," says Lade. This is sustainable for users if batteries do not have to be produced in the first place.

The DigiLED CC driver can unfold its full performance spectrum with solar street and pedestrian lights that are networked with each other via Bluetooth mesh. "The driver is also ideal for modern buildings with DC mains networks. It is also perfectly suited for energy self-sufficient island systems such as in boat building or caravanning solutions," says Lade.

**Enquiries:** [www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)



## Antley Group expands product offering with new illumination products

With almost a decade in business, illumination manufacturer and supplier Antley Group is proud not only to have come out of the Covid pandemic with its head held high, it has continued to innovate and design lighting products of the highest standard. That has led to the unveiling of new fixtures.

"We are excited by the prospects of our Isilo LED streetlight and our updated Monate LED post top," says Anthony Hawley, Chief Executive Officer (CEO) of Antley Group. "Our products have been designed to withstand Africa's harsh weather conditions, whether it be our steel poles, high masts, street lighting and more." The CEO adds that the latest lighting technologies have been used to provide creative and cost-effective lighting solutions to the market, and their products are SABS and ISO 9001 accredited.

The company has completed numerous products around South Africa, while also managing to break into the international

marketplace with sales to neighbouring countries. "You will find Antley products everywhere from highways and sports stadiums, to commercial buildings and energy efficient sites," says Hawley.

1. The Monate LED post top luminaire was designed using the latest advances in LED technology, resulting in a compact light fitting with a vacuum-moulded indirect reflector. Application areas for the Monate include residential suburbs, shopping spaces and other public areas including car parks and pedestrian walkways. The luminaire's construction includes a high-pressure die-cast aluminium spigot base, high-impact acrylic conical diffuser bowl and glass-filled nylon top cover, as well as ultra-durable stainless steel screws. The lighting performance sees the Monate emit low-glare light that does not distract people from what they are doing, while offering an energy- and cost-effective solution to regular post tops.



2. The Isilo LED street light is the second new light from Antley Group. It is available in options from 30W to 150W, and is suited to lighting streets, walkways and urban settings. Utilising a unique modular design, the Isilo can be customised to suit users' specific needs, while also allowing for seamless integration into existing smart lighting networks thanks

to its NEMA and ZAGA book 18 readiness. The Isilo is IP66 rated, which means that it is protected against powerful water jets from all directions, as well as being dustproof. The light fitting is constructed from marine-grade aluminium, with lumen outputs ranging from 130-170 lm/W.

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

## Well-lit office space leads to improved employee mental health

The importance of office panel LED lights is often overlooked because they are 'just panel lights', but it could not be further from the truth, says Tasneem Singh, Operations Manager at lighting dealers Brite Lighting.

"Several advancements have been made in office panel light fittings over the past few years to improve efficiency, functionality, and user experience. When you have staff in an office, they need to be comfortable with their environment and lighting has become more important because of this." Here are some notable advancements that have made panel lights more important:

**1. LED technology integration:** The widespread adoption of LED technology in panel lights sees the product offer improved energy efficiency, longer lifespan, and better light quality compared to traditional fluorescent or incandescent options. They provide for uniform illumination, reduce glare, and offer customisable colour temperature options to create comfortable, productive work spaces.

**2. Slimmer designs:** Modern office panel light fittings feature slimmer profiles and sleeker designs, allowing for seamless integration into contemporary office aesthetics. Thin and lightweight LED panels minimise visual clutter and create a clean, minimalist look that complements modern architectural styles and interior design trends. These slim designs also maximise ceiling space and reduce installation complexities.

**3. Improved light quality & distribution:** Advancements in optical design and light diffusion technology have led to improved light quality and distribution. Uniform light distribution across the panel surface eliminates hotspots and shadows, providing consistent illumination

without flicker or glare. High Colour Rendering Index (CRI) LEDs ensure accurate colour representation, enhancing visual comfort and productivity for office occupants.

**4. Smart control functionality:** Many modern office panel light fittings are equipped with smart lighting controls, allowing users to adjust light levels and settings to suit their preferences and tasks. Dimmable LED panels enable energy savings by reducing light output when full brightness is not required, while smart controls offer additional features such as scheduling, occupancy sensing, and integration with building automation systems for enhanced energy efficiency and user convenience.

**5. Colour tunability & circadian lighting:** Some advanced panel light fittings offer colour tunability features, allowing users to adjust colour temperature throughout the day to support circadian rhythms and promote well-being. Tuneable white LED panels simulate natural daylight variations, providing cool, energising light in the morning and warm, relaxing light in the evening to enhance alertness, mood, and productivity for office occupants.

**6. Energy efficiency & sustainability:** Office panel light fittings are increasingly focused on energy efficiency and sustainability, with LED technology driving significant reductions in energy consumption and operational costs. Energy-efficient LED panels use less electricity, produce less heat, and have longer lifespans, resulting in lower maintenance requirements and reduced environmental impact compared to traditional lighting options. Many LED panels are also recyclable and free from hazardous materials, further contributing to sustainability goals.

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



## Eurolux highlights sustainable lighting alternatives



Sustainable is not the first word you think of when you talk about floodlights. Lighting leader Eurolux has a different view, though. "We are excited about our new range of solar floodlights," says Eurolux. "They stand at the forefront of technological innovation when it comes to outdoor lighting, both in terms of performance and the way that they harvest the sun's power." Here are a couple of important things to remember about solar floodlights (and any other light, for that matter):

### 1. Watts matter... somewhat

Forget about the watt rating on the bulb – solar floodlights need to be powerful, so you should consider the lumen count as being more important as they are more accurate when it comes to measuring brightness. Outdoor areas that are going to be lit will require significant lumens to increase visibility over a bigger area, so the higher the lumen rating, the better the lightbulb.

### 2. Know your colour

There are two main colours when it comes to lighting – 2700K that is warm and a pale shade of yellow, and 5000K that is cool and a whiter shade. Eurolux's new solar floodlights are measured at between 6000 and 6500K, which means that they deliver an incredibly clear and bright light over the area you are illuminating.

### 3. Security is important

Floodlights by nature are used to light up spaces that need to be secure, so opting for a design that is either equipped or

compatible with motion sensors. This allows for well-lit areas with the benefit of motion activation should someone or something come too close, thereby discouraging would-be intruders.

### 4. Made to last

South Africa has a particularly harsh climate compared to many other countries, so lighting manufacturers, like Eurolux, design, develop and manufacture their products to withstand some of the toughest weather conditions. The company's new solar floodlights feature an IP65 rating, which means that they are protected against dust and water, and their performance will not be compromised by external weather factors. Eurolux's new floodlights are constructed with ultra-tough and durable ABS, PC, metal and anti-UV materials.

### 5. Battery boost

Solar floodlights need to perform better than traditional electricity-powered floodlights, so manufacturers need to utilise the latest battery technology to maintain their lighting abilities once the sun goes down. LiFePO4 batteries (lithium-iron phosphate) are the popular new kid on the battery block as they have characteristics that out-shine their predecessors. From a longer cycle life, to improved thermal stability, they are far more stable than traditional batteries, which is why Eurolux has used these LiFePO4 batteries.

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



## Referro lights up illumination market in the Northern Cape



Sean Smith, CEO of Pure Light.

Electrical distributor Referro Systems has announced a new partnership with illumination manufacturer Pure Light LED that will see Pure Light's products fully distributed throughout the Northern Cape.

Adrian van Wyk, the Managing Director of Referro, says, "This agreement is of great importance to both companies. It is an exciting venture – we view Pure Light as an innovative local manufacturer whose work with LED illumination products is being taken note of. Pure Light's products exceed local requirements and can stand up to South Africa's harsh climatic conditions."

Sean Smith, the Chief Executive Officer (CEO) of Pure Light, explains, "This is a symbiotic relationship – Pure Light has found in Referro Systems a successful partner with the resources and distribution network equipped to grow its brand and technology expertise within the Northern Cape region, extending this countrywide in the near future." Referro has an established network in place, which means that Pure Light will now have access to that channel and its products will be available to a

larger customer base. "This distribution agreement extends our service offering as a truly one-stop supplier of high-quality industrial electrical, automation and global software and hardware brands," adds Smith.

Pure Light is in its 12<sup>th</sup> year of operation, with the lighting manufacturer and supplier having been founded in 2012 in Johannesburg. "We are a full-circle company – our offering ranges from illumination design and manufacture, to the distribution and servicing of high-end LED lighting with ratings up to IP65," explains the company's CEO.

More recently, Pure Light's focus has been towards the industrial sector, and it includes specialised energy-saving solutions for factories and warehouses in the steel, mining, petrochemical and horticultural lighting for specialised agricultural applications. "We are one of very few companies in this industry that guarantees lux levels for up to five years," explains Smith. "Our range of LED luminaires include, high bays, low bays, floodlights, streetlights, parking lights and

horticultural lights. That is just the tip of the Pure Light iceberg."

An aspect of Pure Light's products that is sure to strike a chord with customers is energy saving. In an economy that is struggling to cope with loss of business due to the on-going loadshedding outages, any area where money can be saved is important, adds Smith. "We confidently guarantee up to 50% saving when you retrofit your current lighting systems with our Pure Light products. In some instances, the savings are as high as 80%, especially when you install our Bluetooth Integrated Light Management System (LMS)."

Van Wyk concludes, "Pure Light boasts extensive experience in research and development, lighting design and the manufacture of a full range of high-end industrial and commercial products with specialised modular design providing complete solutions, flexibility and unique applications. We are looking forward to a wonderful future working together."

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

## Smart lighting is all about connectivity and interoperability



The most recent developments in smart light controls for home use include advancements in connectivity, interoperability, functionality, and user experience, says the team at Illumination Technology. "Almost any light fitting can be connected to a smart control device, giving the user control over how their illumination solutions work. This can be something as simple as an auto dimmer, or more complex like creating scene settings for the entire house. It is all available right now at your fingertips."

Here are some of the most important developments in smart lighting:

### 1. Integration with voice assistants

Smart light controls now seamlessly integrate with voice assistants such as Amazon Alexa, Google Assistant, and Apple Siri. This integration allows users to control their lights using voice commands, enhancing convenience and accessibility for homeowners.

### 2. Enhanced connectivity protocols

Updates include the adoption of advanced connectivity protocols such as Bluetooth Low Energy (BLE), Zigbee, and Thread. These protocols offer improved range, reliability, and interoperability, enabling seamless communication between smart light controls,

hubs and other connected devices in the home ecosystem.

### 3. Mesh networking technology

Mesh networking technology enables smart light controls to form robust, self-healing networks that extend the range and reliability of communication between devices. Mesh networks allow for greater scalability and flexibility in home automation setups, accommodating larger homes and complex environments with ease.

### 4. Improved energy management

Advanced smart light controls feature built-in energy monitoring capabilities that provide real-time insight into energy consumption patterns. Users can track and optimise their energy usage, set energy-saving schedules, and receive alerts about energy-intensive devices, helping to reduce energy bills and environmental impact.

### 5. Scene & automation creation

Functions such as enhanced scene and automation creation capabilities allow users to create custom light scenes and automation routines tailored to their preferences and lifestyle. Smart light controls offer intuitive

apps and interfaces that enable easy programming of schedules, triggers and conditional actions based on time, occupancy or sensor inputs.

### 6. Colour tuning & ambiance control

Smart controls now offer advanced colour tuning and ambiance control features, allowing users to adjust colour temperature, brightness and colour saturation to create personalised lighting environments for different activities and moods. Colour-changing LED bulbs and fixtures offer millions of colour options, enabling endless creative possibilities.

Enquiries: [www.itech-lighting.business.site](http://www.itech-lighting.business.site)

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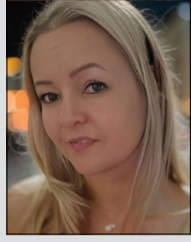


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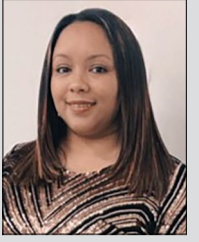
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## BRIGHT SPARK

### SMART DAD

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

### FEBRUARY SOLUTION

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

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- Cables and cable accessories
- Lighting

#### MAY 2024 FEATURES

- Energy efficiency
- Earthing, lightning and surge protection
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