



FLAMEPROOF MANUFACTURING

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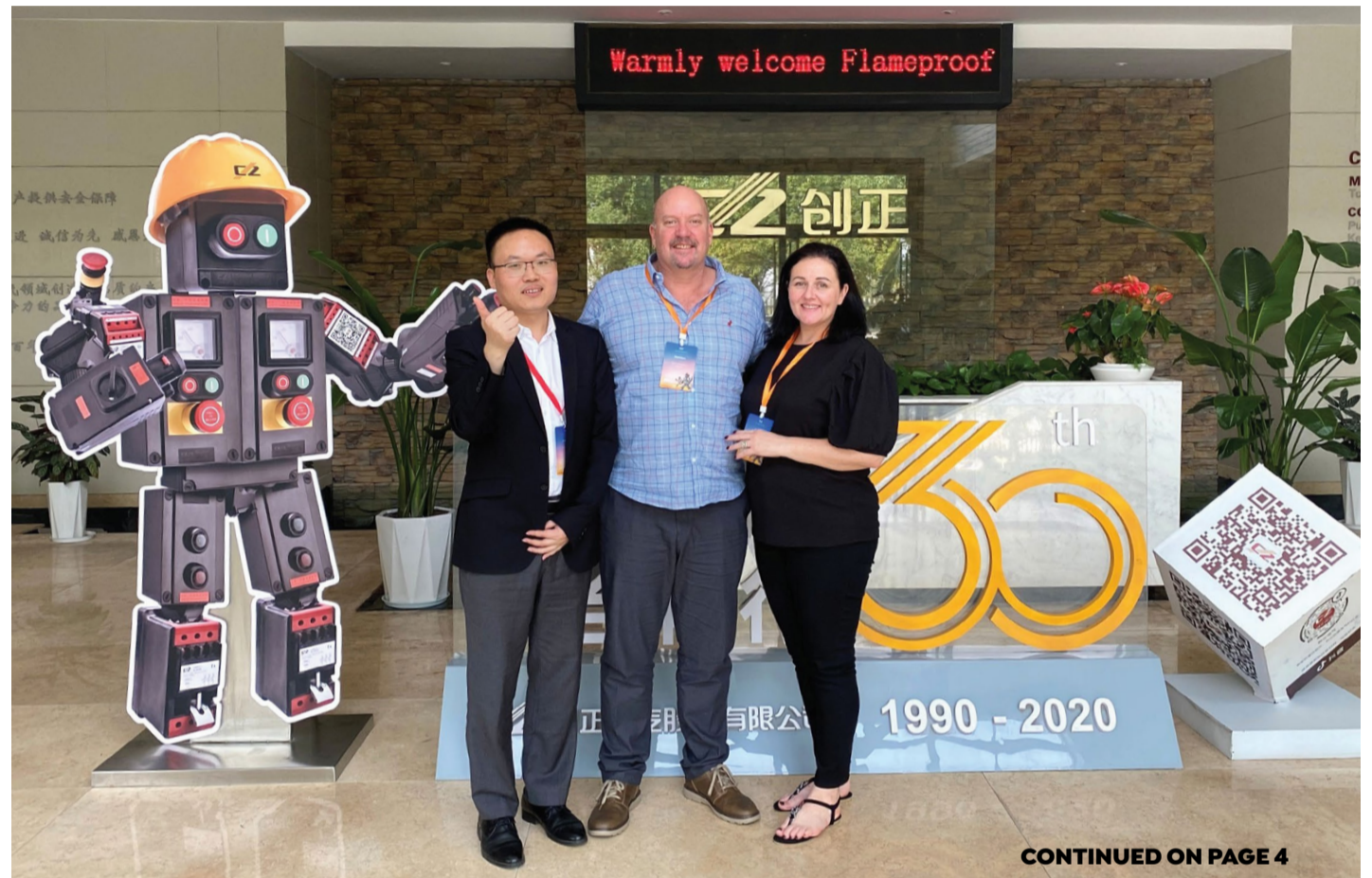


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FLAMEPROOF MANUFACTURING: WHERE SAFETY IS PARAMOUNT



CONTINUED ON PAGE 4

Flameproof Manufacturing, an ISO9001 company, is leading the way in explosion-proof components. In industries where safety is not just a priority but a necessity, the demand for reliable explosion-proof components has never been higher. Regardless of sector, environments that involve flammable gases, dust, or vapours require specialised equipment designed to prevent catastrophic accidents.

Enter Flameproof Manufacturing, the sub-Saharan distributor of CZ Explosion-Proof, a global leader in the design and manufacture of explosion-proof solutions that protect assets, safeguard workers, and ensure compliance with international safety standards.

Setting the standard for safety

Founded in 2014 by Brendon Chalmers, Flameproof Manufacturing has grown into a trusted name in hazardous area protection, offering a comprehensive range of explosion-proof components, including, but not limited to:

- Junction boxes;
- Control stations;
- Control components;
- Isolators stations;
- Limit switches; and
- Lighting systems.

Each product is meticulously engineered and rigorously tested to meet or exceed global certification requirements such as ATEX, IECEx, UL, and CSA. By doing so, Flameproof Manufacturing ensures its products can be safely used in Zone 1, 2, 21 and 22 hazardous environments. All its equipment has local IA certification for the South African market.



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6500K Daylight · 1 Year Guarantee

R26,99



Flash LED GU10 Lamp
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Polokwane, Limpopo, T: 015 297-1590

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Heqlen Mega Mica
89 Sealen Road, **Phalaborwa, Limpopo, T: 015 781-3691**

Xpress Mica Build Paledi
On R71 (Next to Paledi Mall Robot), Mankweng,
Paledi, Limpopo, T: 078 644-1111

Eazy Build Mica
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Central Mica Hardware
Valyland Shopping Centre, Recreation Road,
Fishhoek, Western Cape, T: 021 782-1131

Xpress Mica Build
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Kendal Mica
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Millside Mica Paint & Hardware
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Paarl Mica
395 Main Road, **Paarl, Western Cape, T: 021 871-1929**

Reid's Mica
28 Retief Street, **Ceres, Western Cape, T: 023 312-1053**

Spiro's Mega Mica
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Woodlands Mica
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Dick And Allsop Mica
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and Seedcracker Street, **Celtisdal, Gauteng, T: 012 656-0509**

Hekpoort Mica
100 Main Road, **Hekpoort, Gauteng, T: 014 576 2383**

Centurion Mica
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Centurion, Gauteng, T: 012 944-8666

Petit Mica
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Benoni, Gauteng, T: 010 591-3990

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Lenasia Mega Mica
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Morning Glen Mica
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Gallo Manor, **Sandton, Gauteng, T: 010 880-7210**

Mica Lenasia
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Jayen Mica
Primrose Rd, Primrose, **Germiston, Gauteng, T: 011 852-0797**

Benoni Mega Mica
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Estcourt Mica
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Ace Mica Dundee
52 Smith Street, **Dundee, KwaZulu-Natal, T: 034 212-1379 / 034 212-1615**

BBS Mica Ballito
Shop 18A Lifestyle Centre, Douglas Crowe Road,
Ballito, KwaZulu-Natal, T: 032 946-8400

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14 Dollar Drive, **Richards Bay, KwaZulu-Natal, T: 035 789-7645**

BBS Mica Build Eshowe
37 Osborne Road, **Eshowe, KwaZulu-Natal, T: 032 946-2014**

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Sasolburg, Free State, T: 016 976-1981

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Let us show you how.



What about servitisation?



Ilana Koegelenberg

I was converted to the servitisation model many years ago, long before I'd even considered the possibility of solar-as-

a-service or lighting-as-a-service. I was still living and working in Brussels when I headed up the marketing team tasked with mainstreaming cooling-as-a-service globally. Over the next couple of years, we were astounded by how quickly the model gained traction and just how popular it became.

The reason was simple: it made perfect sense. Why invest substantial capital in a state-of-the-art system with all the bells and whistles when you can allocate that money to your core operations and leave the cooling to the experts? You don't need to employ someone to maintain the system, and you certainly don't have to worry when it breaks down. Why endure the hassle? Why shoulder the risk?

Naturally, I've been enthusiastic whenever servitisation or subscription models arise in conversation. The first occasion was last year when I interviewed Henk Rotman of Tridonic and Gauteng chair of the Illumination Engineering Society of South Africa (IESSA). Over coffee, we discussed lighting-as-a-service and how it makes tremendous sense for South Africa, yet there remains considerable industry resistance to widespread adoption of this model.

My second conversation about as-a-service models was with Andrew Middleton,

CEO and founder of GoSolr, South Africa's largest residential solar company. GoSolr held a media briefing in June for the release of its latest "light paper". According to Middleton, they've witnessed steady growth in subscriptions within the local residential solar market. In fact, as much as 80% of their residential business now operates on subscriptions. The model clearly works.

Gone are the days when affordability serves as a valid excuse for not installing energy-efficient equipment or more sustainable technology. You can access the Rolls-Royce of equipment and simply pay for what you use. The equipment will likely run more efficiently (and for longer) with experts maintaining it, and you needn't worry about being left without functioning equipment.

The caveat, naturally, is ensuring you partner with a reputable supplier – someone who won't vanish overnight, never to be heard from again. Fortunately, these days there are plenty of established providers with lengthy, verifiable track records. So, why aren't we promoting this approach more aggressively? Why don't we have more solar subscriptions in South Africa? (Drop me an email if you have any thoughts on this.)

During that GoSolr media briefing, I learnt that less than 140,000 South African homes have solar. Yet electricity costs continue

rising – July has arrived with increased pricing. We still lack a stable power supply from Eskom. But at the same time, we remain one of the world's best countries for solar potential. Something doesn't add up.

These were just some of the points discussed during the highly informative GoSolr briefing. The company has some interesting ideas for tackling South Africa's electricity challenges and the way forward. Read the full story on page 12.

This edition also looks at Cables and Cable Accessories – always a popular topic. Read more about Three-D Agencies' comprehensive range of cable protection products (page 7) and Pratley's range of prefitted junction boxes (page 10).

In our Lighting section, you can read about Eurolux's braai light on page 15 and Tridonic's SensorX, an AI-based sensor that optimises street lighting efficiently and sustainably, on page 16. You can also find out more about BEKA Schröder's recent installation of high-performance luminaires for the Engen Carlswald service station (page 15). And so much more.

Technology moves fast, are you keeping up? For now, happy reading. Stay warm out there.

Ilana Koegelenberg

sparks@crowm.co.za

Flash Components: Lighting Africa, lighting the future

Flash Components has become a familiar name in electrical wholesale and retail across Southern Africa, with over 23 years of proven success in the lighting industry. Known for its distinctive green box packaging, the Flash brand has built a reputation on one central promise: best value for money. From LED lamps and fittings to everyday consumables like batteries, lighters, and multi-plugs, Flash delivers good quality products at highly competitive prices.

Flash Components imports and distributes a wide range of products to both major retail chains and independent hardware stores. Its portfolio includes several specialised brands under the Flash umbrella – such as LED Basic, Evolution, and Harry's Homeware – each tailored to serve specific market segments. The core Flash brand focuses on durability and affordability, with a three-year guarantee on most products.

Product reliability is a top priority. All items undergo rigorous testing by engineers before and after production to ensure consistent performance and safety. Flash is a proud member of Safehouse, a not-for-profit that promotes electrical safety and compliance in South Africa. All Flash lamps, fittings, lighters and multi-plugs comply with national safety standards, giving retailers and end users peace of mind.

The Flash Logistics Centre in Cape Town spans over 7,000 m², housing the company's head office, three warehouses, a showroom, a product testing lab, and the in-house Flash Business Academy. In 2024 alone, Flash sold more than six million lighting units – making it the country's largest supplier of household light bulbs, LED tubes, and floodlights.

But Flash Components is not only focused on commercial success. A key part of its long-term strategy involves investing in



people and communities. When COVID-19 struck, Flash opened the doors of the Flash Business Academy – previously reserved for internal staff – to community leaders, launching a free training initiative aimed at equipping South Africans with practical life and business skills.

Since then, the academy has hosted a wide range of participants: schoolteachers, police officers, religious and community leaders, and NGO representatives. For example, 22 Elnor Primary School teachers received learner support training. Two Khoisan chiefs studied business skills at the academy and returned to apply them in their communities. These are just a few examples of Flash's ongoing efforts to help improve lives and communities across Africa.

According to the company, one participant shared: "Without Flash, I would never have

thought about starting my own business and an NPC." Another remarked, "The spirit of Ubuntu is tangible here. It's not something you often see in the corporate world."

These stories reflect a philosophy that goes beyond corporate social responsibility. Flash sees community development as an investment in Africa's future, not a side project.

"Flash Business Academy has really changed my life personally and professionally," said ZJ, another participant.

This commitment to community development is what sets Flash apart. Free courses, seminars, and mentorship are not only provided but are actively encouraged and integrated into the company's operations.

For the electrical trade, Flash offers more than just a consistent supply. Partners gain

access to a supplier that values quality, compliance, and long-term value. Retailers can rely on competitively priced, well-supported products, while end users benefit from reliable, energy-efficient lighting built to last.

"When you support Flash, you are part of something greater – a supply chain that gives back to South Africa and the broader African region," the company said. Flash uses its power and resources to make a real, measurable impact on society and the economy.

As South Africa and the continent continue to grow, Flash is ready to meet rising demand with trusted products and a long-term view: "Flash is not just about lighting homes – it's about lighting the way forward."

Enquiries: <https://flash.za.com/>



SWAN Electric Gauteng has moved

SWAN Electric has announced its relocation to new, larger premises in Gosforth Park, owned by its holding company, Mobicon Group.

After many years based in Midrand, a strategic decision was made to relocate to a less congested, more accessible, and spacious location. This move will enable SWAN to better serve its clients and suppliers while enhancing its operational capabilities. The new facility offers modern advantages, including a significantly larger warehouse, improved loading and offloading areas for shipments and deliveries, and an updated warehouse environment.

Additionally, a modernisation of in-house testing facilities is being carried out, including one of the very few advanced circuit breaker testing facilities in South Africa. The manufacturing and assembly workshops, as well as the training areas, are also undergoing an upgrade. The new premises will feature a showroom to display the company's products, making visits to SWAN Electric even more enjoyable.

SWAN Electric remains fully committed to its clients. The normal telephone numbers for Gauteng and the Pretoria desk continue unchanged, and delivery services across Gauteng are being continued with minimal



interruption. Similarly, the operations of SWAN in KwaZulu-Natal, the Eastern Cape, and the Western Cape remain unchanged, but some exciting developments will be announced later in 2025.

With immediate effect, SWAN Electric in Gauteng officially operates from 258 Amalthea Road, Amalthea Sector, Gosforth Park, Germiston, Gauteng.

"Once settled into our new home, SWAN Electric warmly invites clients and suppliers to stop by, meet the team, enjoy a coffee, and explore the new SWAN Electric premises," the company said.

Enquiries: <https://swan-electric.co.za/>

Hexagon Electrical appoints new CEO

David Dyce has been appointed as the new CEO of Hexagon Electrical, part of Montsi Investments, effective February 2025.

Dyce has enjoyed many years in the electro-mechanical sector, with extensive experience in electrical, automation, installations and fault finding. His technical expertise is enhanced by his business, leadership, and sales skills, with a focus on customer satisfaction that aligns with the company's prime objective. Dyce's commitment to the highest quality and safety standards will be instrumental in guiding the company to further growth in his role as CEO.

About the company

Hexagon Electrical specialises in the design, manufacture and reconditioning of a wide range of standard and bespoke flameproof and non-flameproof electrical equipment. This range of equipment meets stringent quality, environmental, and safety



specifications. It comprises motors and transformers, enclosures and switchgear, standard and ventilation fans, scrubber fans and auxiliary equipment.

Meanwhile, Montsi Investments – which acquired Hexagon Electrical from the founder, Theuns du Toit, in 2022 – has business interests in financial services, energy, telecommunications, manufacturing, healthcare and fisheries.

Enquiries: www.hexelect.co.za

Magnet Electrical relocates Gauteng operations to Sunnyrock

Magnet Electrical has relocated its Gauteng office to Sunnyrock, Germiston.

Founded over 53 years ago as an electrical supplier, Magnet has evolved into a multi-disciplinary expert in the Energy and Sustainability industry. The company is passionate about managing, saving, and generating energy for customers through comprehensive solutions that address modern industrial and commercial challenges.

With this relocation, Magnet continues to operate from its head office in Durban, with branches in Richards Bay and Pietermaritzburg in KwaZulu-Natal (KZN), and now from its new Germiston facility in Gauteng. This strategic move enables the company to better serve its growing client

base across these key industrial regions.

In-house expertise

Central to Magnet's offering is its strong in-house Engineering and Project Management division, which designs and completes turnkey electrical, lighting, solar and back-up power projects. The team of committed and motivated professionals focuses on identifying operational issues within client facilities and providing the most suitable products, solutions, and services to ensure smooth and efficient operations.

The company's engineers specialise in turnkey projects with a strong focus on energy efficiency and sustainability. They audit, design and install solutions for warehouses, factories, including hazardous areas, and retail environments.

Strategic partnerships

Magnet's technical expertise is backed by longstanding relationships with major international electrical brands. The company has been a Schneider Electrical distributor for over three decades, maintaining the largest stockholding of automation products and offering extensive technical expertise and product knowledge.

As the only National Electrical Manufacturers Association (NEMA) hub in KZN for Eaton products, Magnet has established itself as one of the fastest-growing distributors in South Africa for this brand. Similarly, the company has achieved rapid growth as a Siemens distributor, further cementing its position in the market.

Magnet supplies products from market-leading brands, with a highly trained sales

team supported by industry engineers. The company offers skilled technical advice and engineered solutions for all electrical and lighting infrastructure needs.

Enquiries: www.magnet.co.za



FLAMEPROOF MANUFACTURING: WHERE SAFETY IS PARAMOUNT

Innovation at the core

Safety does not come at the cost of innovation. CZ Explosion-Proof invests heavily in R&D to develop cutting-edge solutions that not only meet the technical demands of hazardous sites but also improve installation efficiency and reduce maintenance.

Commitment to compliance and certification

Navigating the complex landscape of industrial safety regulations can be daunting. Flameproof Manufacturing delivers certified components and offers Zone 21 and 22 panels, built in-house, for the various mining operations and Eskom facilities around South Africa.

Industries that rely on Flameproof Manufacturing

Explosion proof components are essential for various high-risk industries where the presence of combustible substances can lead to explosions. These industries include:

- **Oil and Gas:** Drilling rigs, refineries, and offshore platforms require flameproof enclosures for motors, lighting, and electrical systems to protect workers and equipment in volatile environments.

- **Chemical Processing:** In chemical plants where flammable gases and vapours are prevalent, flameproof equipment is necessary for safety and compliance with regulations.
- **Mining:** Mines often have explosive gases or dust. Flameproof equipment ensures that electrical systems do not pose a risk of ignition.
- **Pharmaceuticals:** The pharmaceutical industry, particularly in the production of fine chemicals or powders, often requires flameproof equipment to maintain safety standards.

Looking ahead

As industries continue to evolve with safety, automation, and sustainability, the need for advanced explosion-proof technologies will only grow. Flameproof Manufacturing is positioned to lead this charge with its unwavering commitment to safety, quality, and innovation.

Whether upgrading an existing facility or building from the ground up, Flameproof Manufacturing should be the partner of choice for explosion-proof components that protect infrastructure and lives!

Enquiries: safety@flameproofmanufacturing.com



CONTINUED FROM PAGE 1



From contractor to supplier: How field experience drives Electrahertz's success

By Ilana Koegelenberg

Since its founding in 1982, Electrahertz has carved out a distinctive position in the electrical wholesale industry. What began as an electrical contracting business has evolved into a specialised wholesale supplier, creating a strategic advantage that managing director Ian Greyling believes gives them genuine insight into customer needs.

"This journey has been more than a shift in business model; it's been a deep education in what truly matters on the ground," explains Greyling. The company's contractor heritage means they approach wholesale supply from a fundamentally different perspective than traditional suppliers.

"Our roots as contractors mean we've lived the challenges our customers face – tight timelines, demanding sites, technical complexity, and the constant pressure to deliver quality work efficiently," Greyling emphasises. This firsthand experience translates into a deeper understanding of how products perform in real-world conditions and what contractors genuinely need to succeed.

Understanding real-world challenges

This practical insight translates into tangible benefits for customers. Rather than simply stocking products, Electrahertz focuses on understanding how equipment performs in actual working conditions. "We understand how they're used, where they fail, and what makes them reliable in the field," says Greyling.

The company's independence from specific brands allows it to prioritise solutions over sales. "This means we can recommend the right solution, not just the available one," Greyling notes, emphasising their commitment to customer needs over vendor relationships.

Addressing South Africa's unique challenges

South Africa's electrical landscape presents distinctive challenges that require specialised understanding. With ageing infrastructure, inconsistent supply, and ongoing loadshedding, contractors face unprecedented pressure to deliver reliable solutions in unstable conditions.

Greyling identifies three core areas where Electrahertz is making a difference: backup power readiness, grid protection, and surge management, and enabling smarter, faster installations. The company has responded with innovations including pre-assembled solar distribution boards, compact control panels with hybrid-ready inputs, and flexible surge protection solutions.

Custom solutions for evolving needs

The company's manufacturing capabilities for motor control panels and distribution boards reveal interesting market trends. "Customisation is no longer the exception – it's the expectation," observes Greyling, noting increased demand for panels tailored to specific applications.

Current growth areas include multi-function control panels combining automation, protection, and energy monitoring; solar-ready distribution boards designed for inverter tie-ins; and compact

panels built for tight installations without compromising functionality.

Knowledge as competitive advantage

Electrahertz prides itself on being more than just a supplier. "We've always believed that great service is rooted in great knowledge," states Greyling. The company

invests in continuous learning through regular technical training sessions, in-house knowledge sharing across branches, and constant review of SANS compliance updates and international standards.

"We're a technical partner, and that role comes with responsibility," Greyling

explains. This commitment extends to providing contractors with practical guides, wiring diagrams, and field insights rather than just specifications.

As Greyling summarises: "Our background bridges the gap between the field and the supply chain – giving contractors a partner who speaks their language, anticipates their needs, and backs them with real-world experience."

Enquiries: www.electrahertz.co.za



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Empowering South Africa: The essential role of quality cabling and backup power solutions

As South Africa continues to modernise its infrastructure and embrace smarter technologies, the demand for resilient and reliable electrical systems is greater than ever. At the core of every dependable installation are two often underestimated components: cabling systems and robust standby power solutions. Voltex supports professionals with both – nationwide.

Cables and cable accessories: the foundation of every installation

Cables are not merely channels for electricity; they are vital to the safety, efficiency, and longevity of an entire system. As the requirements of commercial, industrial and residential environments become more complex, the importance of high-quality, compliant cabling is undeniable.

Voltex offers an extensive range of SABS-approved cables and accessories, from low- and medium-voltage cables to armoured and fire-retardant options designed to perform in even the most demanding conditions. Complementing its cable range, it stocks a full selection of essential accessories – cable glands, lugs, cleats, heat-shrink tubing, cable ties and more – to ensure seamless, safe installations.

The Voltex team is equipped with the technical knowledge and practical insight to guide its customers toward the most appropriate solutions, backed by a nationwide network that ensures consistent supply and support.

Standby and emergency power: powering through uncertainty

Given the ongoing reality of load-shedding, grid instability and unpredictable outages, standby and emergency power solutions are no longer optional – they are essential.

Voltex provides a broad spectrum of backup power technologies tailored to a

range of applications. Its offerings include uninterruptible power supplies (UPS), inverters, automatic transfer switches (ATS), and standby generators, as well as hybrid and solar-ready solutions that support energy independence and sustainability goals.

"We are committed to helping businesses maintain continuity and households remain secure, regardless of external power disruptions," the company said.

Voltex: your electrical connection

As a trusted leader in South Africa's electrical supply industry, Voltex continues to invest in innovation, training and customer support to meet the ever-evolving needs of its clients.

"Whether you're specifying cable for a major development or securing critical systems against outages, Voltex is here to deliver proven products, technical expertise and nationwide reach," the company concluded. "Together, we're building a brighter, more resilient future."

Enquiries: www.voltex.co.za

As a trusted leader in South Africa's electrical supply industry, Voltex continues to invest in innovation, training and customer support to meet the ever-evolving needs of its clients.

-Voltex

Connections for life: A legacy of trust, innovation, and compliance

Apex Cordset Technologies has grown from a modest workshop in 1986 to become a powerhouse of connectivity, trusted across South Africa and increasingly around the globe. The company's journey reflects a commitment to quality, compliance, and community upliftment that extends far beyond traditional manufacturing.

From humble beginnings to industry leadership

The company's story began in a small workshop fueled by family values, technical passion, and a bold vision to deliver dependable, high-quality electrical connections that could power homes, industries, and communities. Benoni became the company's base, and from there, its reach expanded significantly.

"Connections for Life is more than a tagline – it's the heartbeat of who we are," said Christos Gerasis, CEO of Apex Cordset Technologies. "It's a promise rooted in our heritage and lived every day through our commitment to quality and compliance."

Building more than products

As demand grew, so did the company's sense of

responsibility. Apex created jobs, trained talent, and built a team of what the company calls "Dream Drivers" – employees who bring their best every day to move the organisation forward.

The company's impact extends beyond manufacturing. Through job creation and skills development, Apex has contributed to community upliftment, establishing itself as more than just a business but as a contributor to South Africa's economic development.

Commitment to quality and compliance

In an industry where safety and reliability are non-negotiable, Apex leads with discipline and integrity. Compliance and quality are treated as sacred commitments rather than mere checkboxes. Every Apex product represents a promise to customers and partners that what they deliver is safe, robust, and built to last.

Innovation remains central to Apex's DNA. From detonator cable assemblies to power cords and accessories, the company constantly pushes boundaries, developing smarter, safer, and more sustainable solutions. Significant investments in

research and technology underscore the company's commitment to future-ready solutions.

"We don't just make cords and cables – we build relationships, we spark trust, and we deliver reliability in every connection we create," Gerasis explained.

Looking forward

As Apex Cordset Technologies looks ahead, the company remains anchored by its purpose and energised by possibility. The organisation continues to strengthen its position in the market



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- Boxes available for general purpose applications or explosive atmospheres.
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"The performance of our products must exceed all others on the World Market"
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sales@pratley.co.za

through strategic partnerships, product innovation, and team development.

The company's growth trajectory shows no signs of slowing, with expansion plans that include strengthening its presence both domestically and internationally. Every product shipped, partnership forged, and team member developed contributes to what the company sees as its ongoing mission.

Gerasis emphasised the importance of all stakeholders in the company's success: "To all who've walked this path with us – our employees, customers, suppliers, and community – thank you. You are the reason Apex is not just a business, but a beacon of trust and innovation."

Enquiries: www.apex-leads.co.za



igus urges a move away from PFAS

igus continues to develop PFAS-free (per- and polyfluoroalkyl substances) engineered plastics in response to mounting evidence of severe environmental and health hazards caused by the chemicals.

These “forever chemicals”, so-called because of their inability to break down in nature, have been linked to widespread pollution of water, soil, wildlife and even human bloodstreams. They’re used in everything from non-stick cookware to industrial lubricants and, most significantly (for the engineering sector), polymer-based components.

Juan-Eric Davidtz, product manager for bearings at igus South Africa, explains that the widespread use of PFAS in industrial polymers, particularly PTFE (Polytetrafluoroethylene, best known by its trade name Teflon), is far greater than most people realise.

“Most of the components manufactured

today contain some form of PFAS – it’s everywhere. Even when companies claim their materials are safe it often means the PFAS they’re using simply hasn’t made it onto the regulatory blacklist – yet.”

The issue is that many manufacturers continue to use hazardous PFAS compounds because they offer great performance in reducing friction and wear. This performance comes at a cost, as once these synthetic materials enter the environment, they remain there indefinitely. They do not biodegrade, they accumulate in living organisms, and they can pose long-term health risks.

“It’s not about being a greenie, it’s about responsibility. These materials are synthetic; nothing like them exists in nature, so they don’t break down. They end up in our rivers, in fish, in us. At some point, we’ve got to ask: is it worth it?” explains Davidtz.

igus, the German-based motion plastics

company with a local footprint, has decided the answer is no. As a global innovator in polymer technology for over 60 years, igus has taken proactive steps to reduce and eventually eliminate harmful PFAS from its products. The company distinguishes between hazardous PFAS and non-hazardous PFAS, a critical distinction in the industry.

“We’re already offering performance-based alternatives that are free of PTFE and contain only safe, non-hazardous PFAS. We’re not waiting until regulators force the industry’s hand. We’re adapting now. We have invested in research and development to engineer new bearing materials that meet the same stringent performance criteria without relying on banned or soon-to-be-banned chemicals. These next-generation materials are not only wear-resistant and self-lubricating but also safer for people and the planet,” says Davidtz.

The European Chemicals Agency (ECHA) and similar bodies around the world are tightening restrictions on PFAS. Although



South Africa has not made its position known on the use of these chemicals, it is clear that companies that continue to use banned or restricted chemicals risk regulatory penalties and reputational damage abroad. Companies like igus are demonstrating that it is not only possible but commercially viable to transition to safer alternatives without compromising on performance. “It’s about moving with the times. As South Africans, let’s stop waiting for the last minute. The solutions are already here,” Davidtz concludes.

Enquiries: <https://www.igus.co.za/>

Safeguarding cables with Three-D Agencies’ expert solutions

Dependable cable protection is no longer a luxury, it’s a necessity. Whether safeguarding cables in mining shafts, industrial plants, renewable power installations, residential developments, or bustling event sites, failure to protect cabling from external hazards can lead to costly downtime, safety risks, and compromised system integrity. Three-D Agencies, a trusted South African distributor since 1977, offers a comprehensive range of cable protection products designed to withstand the toughest environments across Southern Africa.

Why cable protection matters

Cables are often subjected to a multitude of threats: mechanical strain, abrasion, crushing, moisture, chemicals, UV exposure, and temperature extremes. Unprotected cables are prone to rapid wear, electrical faults, and environmental damage. Three-D’s cable protection solutions combat these risks head-on:

- **Enhanced durability:** Adding layers of heat-shrink tubing, trunking, or flexible conduit prevents physical damage.
- **Extended service life:** Shielding cables from moisture, chemicals, and UV rays reduces premature failure.
- **Safer workspaces:** Protection systems guard against trip hazards, accidental damage, and electrical leakage.
- **Compliance-ready:** Well-packed cable runs are easier to inspect, maintain, and certify under regulatory standards.

A product for every need

Three-D’s cable protection suite brings together different technologies to match every scenario:

1. Heat-shrink tubing

- Ideal for point protection of splices, joints, and terminations.
- Ensures tight insulation, keeping water, dust, chemicals, and mechanical strain at bay.
- The halogen free, flame retardant HSCB series offers clean, resilient shielding with adhesive lining for secure sealing.

2. Flexible (corrugated) tubing – MAXFLEX

- Corrugated polypropylene tubing delivers flexible armour ideal for mobile or dynamic installations such as moving

machinery, robotics, or automotive wiring.

- Available in various colours (black, grey, orange) to suit environmental or identification needs.
 - Durable design excels at reducing kinks and resisting industrial wear.
- #### 3. Trunking and accessories
- Rigid plastic trunking (CLT, YT, floor trunking) offers structured routing and protection for multi-cable installations in offices, commercial buildings, and workshops.
 - Comes with end-caps, corner fittings, lids, and joiners for clean, secure installations.
 - Enables easy access for expansion, inspection, and maintenance.

4. Spiroband and grommets

- Spiroband (spiral wrap) allows quick bundling and retrofitting of cables without dismantling existing wiring, ideal for cable chasing.
- LDPE spiroband is resistant to abrasion and UV.
- Grommets protect cables where they pass through panels or metal, reducing noise, wear, and potential abrasion.

- #### 5. Blanking plugs and polyester sleeving
- Blanking plugs seal off unused duct or trunking openings, protecting against dirt, moisture, and pest ingress.

Tailored applications across industries

Three-D’s expansive cable protection line meets the demands of diverse sectors:

- **Mining and Heavy Industry:** MAXFLEX corrugated tubing in bright orange/grey delivers robust protection in wet, mechanical environments.
- **Commercial and Residential:** Neat trunking systems with lids, corners, and blanking plugs support safe, aesthetically clean installations in offices and homes.
- **Marine and Automotive:** Flexible tubing and spiroband handle vibration, moisture, and abrasion in mobile and confined settings.
- **Renewables and Solar:** Heat-shrink and sleeving protect against UV, heat, and moisture in exposed solar installations.
- **Event and Temporary Solutions:** Grommets and spiroband allow rapid, clean deployment of power and network cables while ensuring protection and order.

Why choose Three-D Agencies?

Regional expertise: As a distributor with a footprint across South Africa and into Lesotho, Botswana, Namibia, Zambia, Mozambique, Zimbabwe, Angola, Tanzania, Ghana, and Nigeria, Three-D understands local environmental and logistical challenges.

- **Quality commitment:** Products come from trusted international suppliers, backed by stringent R&D protocols and certifications. Three-D’s promise is “robust and reliable” solutions tailored to the African market.
- **Complete system support:** Beyond individual components, Three-D delivers end-to-end solutions, from heat-shrink kits to full trunking systems, ensuring compatibility and simplifying installation.

Transform your cabling projects

Investing in cable protection isn’t just about durability; it’s about safety, system longevity, and maintaining power and data integrity. With Three-D Agencies, businesses and installers gain access to a full catalogue of: heat-shrink tubing for splice/joint protection; MAXFLEX corrugated conduit for dynamic or exposed environments; trunking systems and accessories for structured installations; and grommets, spiroband, sleeving, and plugs for added layers of protection and neatness.

Concluding thoughts

Effective cable protection is fundamental to any well-designed electrical or communication system, and a smart investment in safety and reliability. Whether confronting harsh industrial conditions, professional installations, or temporary event setups, Three-D Agencies offers the tools to:

- Prevent physical damage and environmental degradation;
- Simplify installation and maintenance;
- Ensure compliance and reduce safety hazards; and
- Extend cable longevity and performance.



With their deep-rooted presence in the region and expansive product range, Three-D Agencies aims to be the go-to provider for cable protection excellence. “Let us help you build resilient, safe, and future-ready cable systems,” the company said.

Enquiries: www.three-d.co.za

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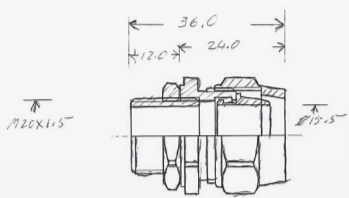
✉ sales@three-d.co.za

🌐 www.three-d.co.za

From Safety Innovation



- **Founder, Franz Lackinger** arrives in South Africa from Germany.



- Franz Lackinger invents the **Captive Cone Gland** after a request from Anglo American Mining to solve the problems with Cable Glands having loose components that get lost or are incorrectly fitted in deep-level mining operations.



- Supplied its first mining projects in the Orange Free State, Goldfields.
- Received its first export orders through its newly appointed agent, Remora Electrical, in the United Kingdom.



- Launched Flameproof Cable Gland range and Handi-Fit Range of Junction Boxes.



- Received approval for use by SASOL on the Secunda GTL Plant.



- Received the Shell Design Award for the EIW and HTPL Range of Ex Glands.
- Played a key role in the development of the SABS 1213 Standard for Industrial Cable Glands.



- Posi Range of Cable Glands specified for the Moss gas GTL Project.
- CCG doubled its production capacity to meet the increasing demand for its Posi Range of Glands and Junction Boxes.



- Specified for the prestigious Eurotunnel project connecting the UK and France.



- Established a second office and distribution centre in Brisbane Australia.
- Specified on the Korean Zinc Project, Townsville.
- Received EN certification for the Ex-range of Cable Glands and Junction Boxes.
- Received Australian Standards certification for the Ex-range of Cable Glands and Junction Boxes.



- Established offices and distribution centre in Hong Kong.

1957

1963

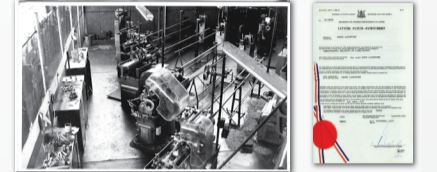
- Franz Lackinger starts his first business; Automatic Cam Design.



1971

1972

- CCG is registered as a company.
- The **Captive Cone Gland** design is granted a patent.



1973

1974

- Received British Standards BS 6121 approvals for its range of Cable Glands.
- Received approval from ESKOM, South African Railway and Harbours, ISKOM, and all major municipalities.



1980

1981

- First CNC machine installed.



1982

1983

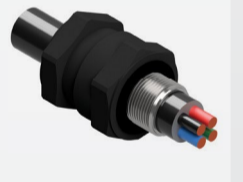
- Established offices and distribution centre in Durban and Cape Town.



1984

1989

- Received SANS ISO 9000 quality certification.
- Launched the unique Posi Seal and Posi Grip Range of Corrosion Resistant Cable Glands.



1990

1991

- Entered the Australian market then specified for the Alcoa Wagerup refinery project.



1996

1997

- Established an office and distribution centre in Perth, Australia.
- Specified for the BHP DRI mega project.



1998

2002

- Received ATEX certification for the Ex-range of Cable Glands and Junction Boxes.



2003

2004

- Received Chinese certification for Ex-range of Cable Glands and Junction Boxes.



To A Global Brand



- Established an office and distribution centre in Singapore.
- Specified on the CWRP project.

2005

2006

- Established an office and distribution centre in the United Kingdom.
- Specified on Sabic Wilton Petrochemical Plant.



- Wins the Prestigious HazardEx Award for Product Safety in the United Kingdom, for the Captive Component Gland Design.

2007

2008

- Established an office and distribution centre in Townsville, Australia.



- Received American Bureau of Shipping certification for the Ex-range of Cable Glands and Junction Boxes.

2009

2010

- Received ISO 14001 Environmental Management System UL DQS Inc.
- Specified for the Chevron Angola LNG Mega Project.



- Received BS OHSAS 18001 Occupational Health and Safety Management System UL DQS Inc.

2011

2012

- Specified by Bechtel for the Curtis Island LNG mega projects in Australia. Shell, Conoco Phillips, Santos, Total Energy.
- Received IEC Ex certification for the Ex-range of Cable Glands and Junction Boxes.
- Established an office and distribution centre in Newcastle, Australia.



- Established an office and distribution centre in South Korea.
- Established an office and distribution centre in United Arab Emirates.

2013

2014

- Opens an R&D centre in the United Kingdom headed by Dr Geof Mood.



- Received Brazilian certification for the Ex-range of Cable Glands and Junction Boxes.
- Received DNV GL certification for the Ex-range of Cable Glands and Junction Boxes.
- Received London Underground certification for the Cable Gland and Junction Box Range.
- Specified for the First Quantum Minerals Panama Copper Mega Project.

2015

2016

- Received EAC certification for the Ex-range of Cable Glands and Junction Boxes.
- Received South Korean certification for the Ex-range of Cable Glands and Junction Boxes.

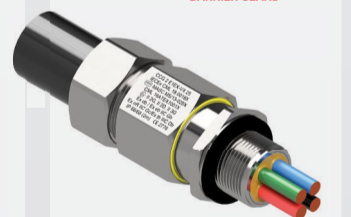


- Wins the Prestigious HazardEx Award for Best User Application for the Quickstop Range of Barrier Glands.

2017

2019

- Launched the VORTEX Barrier Cable Gland Range. Improving the design of the highly successful QuickStop Barrier Cable Gland.
- Specified for the Total Energy Mozambique LNG Mega Project.



- Received NEC/CEC, UKEX, Japanese Class NK certification for the Ex-range of Cable Glands.

2020

2021

- Launched the Stainless Steel Range of Cable Cleats.
- Received GC-Mark for Hazard Analysis and Critical Control.



Celebrates 50 Years In Business.

2022



- A2 Cable Glands installed on the NASA Artemis Mobile Launch Platform in the United States of America.

2023

- Specified Hong Kong Runway 3 Mega Project

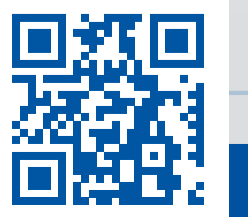


2024

2025

- Explosion Proof Cable Glands specified on Zuluf Field, a super-giant oil field in the Arabian Gulf.

- Specified for Ceres Project in Australia. The largest ammonia urea project in the world.



Turnkey, prefitted junction box solutions for electrical professionals



In today's fast-paced electrical industry, the phrase "time is money" certainly holds true. Electrical contractors and wholesalers alike seek solutions that streamline installations while ensuring compliance and reliability. A range of prefitted junction boxes from Pratley, now available ex-stock, offer a practical, time-saving, and high-quality solution designed for convenience and efficiency.

The ability to source high-quality junction boxes that are prefitted with terminals without delay is a significant advantage for electrical professionals. With these prepopulated boxes now available ex-stock, contractors no

longer face extended lead times, while electrical wholesalers can maintain a steady supply to meet demand.

Popular terminal configurations

According to Tristan Blades, technical projects manager at Pratley, prepopulated junction boxes in popular terminal configurations such as single- and three-phase enhance convenience for both electrical wholesalers and contractors.

"This approach shortens lead times between manufacturers and wholesalers, allowing the wholesaler to stock these boxes and improve service levels for their contractors," he



explains. A challenge that electricians often face is the time required to fit junction boxes with terminals before installation. Pratley's fitted boxes solve this by eliminating that step.

Uncompromised quality and compliance
Pratley's fitted boxes are manufactured to meet stringent industry standards, ensuring safety, durability, and regulatory compliance. "For hazardous areas, it is a regulatory requirement that junction boxes be populated with the correct terminals," Blades points out.

Pratley's fitted boxes offer an innovative, practical, and compliant solution for electrical professionals looking to save time and improve efficiency. With an IP66/68 rating when used with appropriately rated cable glands and blanking plugs, these junction boxes provide the reliability and safety required for various electrical applications.

"For wholesalers and contractors seeking to enhance their service levels and installation efficiency, Pratley's fitted junction boxes are the ultimate ready-to-use solution," concludes Blades.

Enquiries: www.pratleyelectrical.com

Cable manufacturers' impact on renewable energy generation projects

By: Donemore Torerwa, GM: Product Development and Applications, Aberdare Cables

The power shortages across the globe, coupled with the need for clean energy sources to reduce greenhouse gas emissions to mitigate against global warming and climate change, have seen many countries moving towards renewable energy sources. In South Africa, there has been significant movement towards the development and construction of renewable energy generating plants, mainly in the areas of wind and solar plants.

According to the Centre for Renewable and Sustainable Energy Studies (CRSES), as at the end of 2024, about 11.8 GW of renewable energy had been installed in South Africa, of which 3.4 GW of wind energy had been installed by Independent Power Producers (IPPs), 2.3 GW of solar photovoltaic (PV) plants installed by IPPs, and 6.1 GW of solar installed by different consumers. These projects have been successful through the added support of the cable manufacturing industry, as the cables serve the critical part of the distribution and transmission of the generated power.

Aberdare Cables' contribution to renewable energy

Aberdare Cables, as the biggest cable manufacturer in South Africa, has contributed immensely to a number of different renewable energy generation projects across the country and abroad. Aberdare Cables has managed to develop new products specifically designed for the wind generating plants, as well as the solar generating plants.

Aberdare Cables developed products to cater for the renewable energy space as per below listed products:

- **Solardac cable:** 1.5 kV DC Cables designed to IEC 62930 and BS EN 50618 standards for use in solar energy plants.
- **Larger size DC cables:** 1.5 kV to 3.3 kV DC cables, designed to allow for high DC current transmission on solar generating plants.
- **BatDac DC cable:** These are elastomeric-based DC cables available from 1.5 kV to 3.3 kV DC to connect between battery banks and Inverters; they are also used for any other interconnections within the solar plant, for example, between junction boxes and inverters.
- **Windac cable:** These are 22 kV to 33 kV high-tension resistant specialised elastomeric



cables used in wind towers designed to wind turbine manufacturers' standards.

- **Aberwind cable:** 22 kV to 33 kV improved design XLPE cable, fully water blocked with high abrasion and impact resistant, designed to interconnect between wind turbines and substations in wind farms.

Production and grid integration

In addition to these new products developed to meet the needs of the renewable energy generation projects, Aberdare Cables has managed to ramp up production for traditional products relevant in this space, such as single and multicore armoured or unarmoured cables rated 1 kV to 33 kV AC cables for power distribution and linking to the grid.

Understanding the plans as per Eskom's strategy communicated in 2024 to strengthen and upgrade the Grid to accommodate the renewable IPP plants' capacity, Aberdare Cables will continue to support through the production and supply of the required products, and innovation for new requirements and improvements where necessary.

Enquiries: www.aberdare.co.za

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Possible copper cable crisis looms, warns SOEW

With the world requiring up to 3 billion metric tons of copper by 2050 to support green energy transitions and developing nations' infrastructure, far exceeding the 23 million metric tons mined in 2024, pressure on supply chains is mounting. This could drive copper prices above US\$20,000 per metric ton, nearly double today's US\$9,000, incentivising new mines but also risking a flood of substandard products, including cables critical to electrical systems.

This is according to a University of Michigan study published in SEG Discovery, co-led by Adam Simon. The research highlights copper's pivotal role in electrification, water distribution, and healthcare infrastructure, predicting a need for 78 new mines by 2050 to meet 'business-as-usual' growth, let alone, ambitious green goals.

This surge in demand ties directly to South Africa's solar boom, where over 6,200 MW of rooftop solar was installed by early 2025, a 15% rise year-over-year, per the South African Photovoltaic Industry Association (SAPVIA).

"However, this growth is jeopardised by substandard cables, with one in six fires linked to faulty wiring, as seen in a 2023 Cape Town company headquarters blaze and a 2024 Durban warehouse explosion, causing millions of rands in damages," says Tertius Ness, chief operating officer of South Ocean Electric Wire (SOEW), a local cable manufacturer.

"South Africa's booming infrastructure and renewable energy sectors face a possible looming crisis as global copper demand grows, potentially opening the door further to an influx of poor-quality imported copper cables. Local manufacturers have supplied only small quantities of solar cable during this boom period, with imports making up the majority of supply. In many cases imported products have competed on price alone against local manufacturers with often quality compromised," warns Ness.

He emphasises that quality copper cabling, whether for solar, power grids or telecommunications, is non-negotiable. Substandard imports, often failing BS EN

50618 and SANS IEC 62930 standards, degrade under South Africa's harsh climate, leading to arcing, overheating and efficiency losses.

Tests like thermal endurance and UV resistance, mandated by these standards, are often bypassed by manufacturers using inferior PVC insulation, shortening lifespans below the required 15 years. Economically, this results in higher repair costs and reduced system output, a risk heightened as copper scarcity drives price increases that could attract low-quality producers, he says.

Ness cautions, "As copper demand surges, the temptation to cut costs with substandard cables will grow." SOEW's locally manufactured, high-conductivity tinned copper cables with cross-linked polyolefin (XLPO) insulation meet these rigorous standards, ensuring safety and durability.

"By producing locally, SOEW reduces import dependency, lowers costs and supports South African jobs, aligning with the SABS's push for compliance," explains Ness. The University of Michigan study's recycling projection,



Tertius Ness, COO, SOEW.

13.5 million metric tons by 2050, further underscores the need for durable, recyclable cables, an area where SOEW excels.

Ness warns that with price hikes looming, consumers and installers must demand transparency in testing and material specs from manufacturers. That's why SOEW advocates for heightened vigilance to protect South Africa's energy and infrastructure ambitions.

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

Unlocking youth potential to boost South Africa's energy sector



Viren Sookhun, MD, Oxyon People Solutions.

The renewable energy industry is booming in Southern Africa and beyond. However, we face a growing challenge in making the transition to a more sustainable energy future: the talent pipeline, according to Viren Sookhun, MD at Oxyon People Solutions. The local sector has typically relied on older, experienced professionals from the legacy power sector, but they are ageing and retiring, and young people are not entering the sector in meaningful numbers, leaving us without future talent to continue driving the industry forward, Sookhun explains. "Fixing this gap to enable real transformation and long-term success will require collaborative action from both industry and the youth themselves, as well as a new approach to how we educate, inspire, and involve the next generation," he says.

The importance of starting early

One of the issues we currently face is that education initiatives and recruitment drives into the sector are targeting people who have already completed high school. The reality is that this is already too late. To build a sustainable workforce, the journey into the energy sector needs to start as early as Grade 10, when students begin to make subject and career choices, notes Sookhun.

More technical qualifications relevant to the energy industry should be introduced at this stage, not just at the post-matric level. These should not necessarily be limited to engineering, as project management and other technical energy-specific roles are also in demand, and they all require relevant skills. South Africa's many Technical and Vocational Education and Training (TVET) colleges could play a key role here by offering more targeted, industry-aligned courses from the outset.

More than just jobs

Addressing the readiness of the youth to take up jobs within the energy sector is only one piece of the puzzle, according to Sookhun. The industry itself has a crucial role to play in creating opportunities and pathways toward career growth, including bursaries, internships, and apprenticeships. Increased visibility of the renewable energy sector should also be a priority, to ensure that there is greater awareness of renewable power and the energy transition as career options. Career days, company visits and open days, as well as partnerships with schools and tertiary institutions, can help bridge the knowledge and access gap, providing clearer direction and exposure to real opportunities.

Getting young people in the room

Many young people still do not know the full range of careers available in the energy space, and without that knowledge, they cannot pursue these paths. Schools, colleges and universities, supported by industry, need to be proactive in advertising where growth sectors are, what skills are needed and how students can get involved. Once students are studying related fields, it is also important that they be given insight into the industry to further their understanding of the requirements.

Conferences and high-level industry events are becoming increasingly frequent, but they remain largely inaccessible to students. Opening some of these spaces to youth by waiving the delegate pricing for students, particularly those in their second or third year of technical or engineering studies, could be hugely transformative. Listening to strategic discussions, networking with senior professionals, and simply being in the room could shape career ambitions and offer much-needed motivation.

From tick-boxes to transformation

To address our growing skills pipeline challenges, youth development cannot simply be a Corporate Social Investment (CSI) project or a tick-box exercise, explains Sookhun. Real transformation and a strong future for our renewable energy sector will require a strategic, long-term and effectively resourced approach. This needs to include commitment from industry as well as input and involvement from government and education, as well as

active engagement with young people. "Without a deliberate, coordinated effort to engage and develop young talent, we risk building an industry that cannot sustain itself," he says.

This is not just about filling job vacancies. "We need to shape a future workforce that is skilled, motivated, and has the skills to succeed in the society it will be serving," says Sookhun. This, in turn, requires

earlier interventions, alongside more strategic investment in education, as well as sector visibility and career accessibility. To build a sustainable talent pipeline for our renewable energy sector, South Africa needs early interventions, targeted training, youth-focused outreach, and inclusive access to industry spaces.

Enquiries: www.oxyon.co.za



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Breaking the regulatory gridlock: A blueprint for solar energy success

By: Ilana Koegelenberg

South Africa finds itself at a critical juncture in its energy transition, where the promise of abundant solar resources collides with regulatory complexity and policy inconsistencies. Despite significant growth in the renewable energy sector, new research warns that overregulation threatens to undermine progress and potentially trigger another energy crisis.

GoSolr, the country's largest residential solar provider, has released its fourth annual "Light Paper", highlighting the structural and regulatory barriers hampering South Africa's solar adoption. The findings paint a picture of a nation blessed with world-class solar resources but constrained by bureaucratic obstacles that favour existing power structures over energy independence.

According to GoSolr CEO Andrew Middleton: "South Africa has made progress in renewable energy adoption; however, we run the risk of going backwards. Our research shows that while other countries are accelerating their solar transitions, we are being held back by a tangle of regulations that penalise, rather than encourage, solar adoption."

To discuss the paper's findings in more detail, Middleton addressed the media at a June roundtable event held in Johannesburg, which **Sparks Electrical News** also attended.

The current energy landscape

The numbers GoSolr presents in its Light Paper tell a compelling story of both progress and stagnation. Solar power has experienced explosive growth, with the industry expanding fivefold from 2021 to the present, the company estimates. From virtually nothing five years ago, solar now represents 11% of South Africa's energy mix when the sun shines, making it the country's second-largest form of power generation after coal.

However, this growth must be viewed against sobering realities. Coal still dominates at over 74% of the energy mix, while only approximately 137,000 homes have solar installations – a mere fraction of the country's nearly 17 million households. The industry adds roughly 1,000 new

residential installations monthly, a pace that Middleton describes as insufficient given the scale of opportunity.

The loadshedding paradox

The apparent improvement in loadshedding masks deeper systemic issues. Eskom's Energy Availability Factor (EAF) – the percentage of generation capacity actually available – sits at approximately 57%, well below the utility's 70% target. More troubling, recent data shows performance declining back towards crisis levels.

"We're about 4% above EAF levels during a crisis year in 2023," Middleton notes, emphasising that the current reprieve from loadshedding isn't due to Eskom's improved performance but rather the six to seven gigawatts of alternative energy sources added over the past four years. "Every gigawatt is a stage of loadshedding. When industries add six gigawatts up, that's six stages of loadshedding that have been avoided."

This dependency on alternative energy sources to maintain grid stability makes the regulatory obstacles facing the sector particularly concerning.

Tariff complexity and cost concerns

Perhaps nowhere is the regulatory confusion more apparent than in electricity tariffs. The National Energy Regulator of South Africa (NERSA)'s recent approval of a 12% average tariff increase for Eskom customers represents just one layer of complexity. More significant are the proposed changes to tariff structures, particularly the dramatic increases in fixed charges.

The disparities between municipalities are striking. While Cape Town proposes a fixed charge of R390 per month and Eskom direct customers face R423, Johannesburg's proposal reaches R1,650 – a figure Middleton describes as "not cost-reflective at all" and more about "recouping lost revenue" than covering actual grid connection costs.

These high fixed charges create perverse incentives, effectively subsidising high-energy users at the expense of low-consumption households. "Higher income earners might end up being cross-subsidised by lower income earners," Middleton warns, noting the correlation between household income and power consumption.

The move towards time-of-use tariffs, while directionally correct, lacks the reciprocal benefits that would make the system fair. "If consumers are getting charged at the peak, they should be able to sell at the peak if they've got solar or backup," argues Middleton, highlighting the absence of meaningful feed-in tariff options in most municipalities.

Cape Town stands as a notable exception, having successfully reduced bi-directional meter costs by more than half, making feed-in tariffs viable for residential users. This demonstrates that municipal-level solutions are achievable when there's political will to make them work.

Unfortunately, while some municipalities show progress, national policy has moved in the opposite direction. Beyond complex tariff structures, new barriers are emerging that threaten to stifle the sector's growth entirely.

Import tariff challenges

Chief among these is the import tariff challenge. GoSolr opposes the recently introduced import tariffs on solar panels and proposed tariffs on other equipment,

arguing they're revenue-focused rather than genuinely aimed at building local industry. While supporting local manufacturing in principle, Middleton argues that production incentives (hiring incentives, plant construction incentives) would be more effective than import tariffs. Without meaningful local manufacturing capacity, the tariffs simply increase solar costs and create barriers to renewable energy adoption.

These regulatory barriers stand in stark contrast to the approaches taken by international leaders in solar adoption.

Global comparisons highlight potential

South Africa's solar potential ranks among the world's top five, sitting on a latitude line comparable to parts of South America and Australia. Yet the country lags significantly behind international peers in solar adoption. Hungary, despite inferior solar resources, generates 25% of its power from solar. Australia reaches 18%, while South Africa manages just 5% on average.

"We're in the perfect place for sun," Middleton emphasises. "There is a clear opportunity to improve the percentage of solar used in South Africa and alleviate more strain from the national grid."

Technology and innovations

Amidst these challenges, GoSolr has developed technological solutions that point towards a more integrated energy future. The company's proprietary "GoSolr Brain" uses artificial intelligence to optimise solar installations, potentially increasing power production by 20-40% through intelligent management of when to produce, store, or feed power back into the grid.

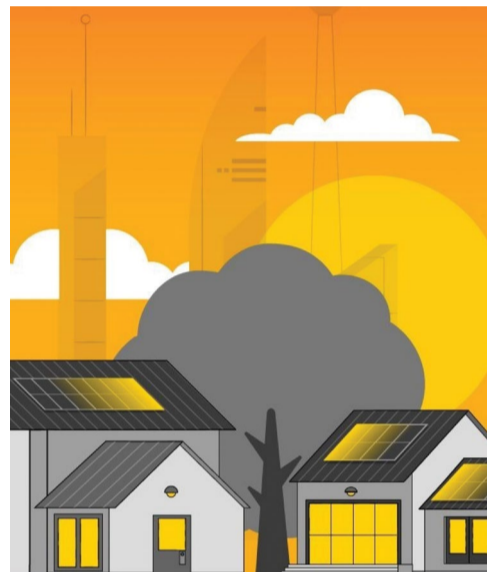
This technology addresses one of solar power's fundamental challenges: the mismatch between peak generation (midday) and peak consumption (evening). The AI system can control major household energy consumers like pool pumps and geysers, maximising solar utilisation while minimising grid dependency. This approach becomes particularly valuable as South Africa moves towards time-of-use tariffs that charge premium rates during peak periods.

Beyond individual households, this technology enables more ambitious concepts like wheeling – selling power to users nowhere near you through grid accounting systems – and community microgrids. Wheeling legislation has recently been passed in South Africa, though implementation requires coordination between multiple stakeholders, including Eskom and municipalities. But, if done right, such distributed power networks could fundamentally transform how South Africa generates and distributes electricity.

Industry maturation and future prospects

The solar industry has matured significantly from its early days marked by quality concerns and inexperienced installers. "When we started the company in 2021, the solar industry had a bad reputation," Middleton acknowledges. "But it's getting much better. The industry as a whole has grown and matured, and now there are big companies involved."

Current hesitancy around solar adoption stems less from quality concerns and more from uncertainty about future costs and regulations. "There's uncertainty around



what you're going to pay that's holding it back at the moment," Middleton observes.

The subscription model that GoSolr pioneered has gained significant traction, with the market shifting from 80-90% outright purchases to approximately 70-80% subscription-based installations. This model addresses capital constraints while transferring maintenance and performance risks to specialised providers.

However, the industry still faces significant skills development challenges, with many electrical training facilities having closed over the past 20-30 years. "We get a lot of offers from students who have been given bursaries for electrical studies but can't be placed, which is crazy, because there's such a need for those types of skills," Middleton notes. This skills gap represents both a challenge and an opportunity as the sector scales towards servicing millions more homes.

An important moment

South Africa stands at a renewable energy crossroads where abundant natural resources and willing private investment meet regulatory obstacles and policy uncertainty. The country's energy future depends on whether policymakers can resist protectionist instincts and embrace frameworks that encourage rather than constrain alternative energy adoption.

As Middleton concludes, "South Africa has abundant sunshine and tremendous potential, which is being wasted by regulatory blockades and inconsistent policies. The private sector is ready, consumers are willing, and the technology is here. It's time for regulators to let progress happen."

The choice facing South Africa is clear: embrace regulatory reform and unlock its solar potential, or risk sliding back into an energy crisis through policy paralysis.

Enquiries: www.gosolr.co.za

The path forward

GoSolr's Light Paper identifies five critical reforms needed to unlock South Africa's solar potential:

- 1. Cost-reflective tariffs** that genuinely reflect grid connection costs rather than revenue protection measures, coupled with consumer choice in tariff selection.
- 2. Import tariff review** to prevent making electricity generation unnecessarily expensive, particularly given the absence of large-scale local manufacturing.
- 3. National framework standardisation** to replace the current patchwork of over 150 municipal regulations with consistent, quality-focused processes.
- 4. Streamlined compliance** that maintains safety standards while reducing bureaucratic burden, as many municipalities lack capacity to process applications efficiently.
- 5. Open wheeling and feed-in access** allowing anyone capable of generating power to participate in the energy market.

Schneider Electric launches first Innovation Hub in Africa



Schneider Electric, the global leader in energy management and automation, and recognised sustainability leader, has unveiled its first registered Innovation Hub in Africa – a milestone development that forms part of the company’s long-term investment on the continent.

Located at Schneider Electric’s new, state-of-the-art English-speaking head office in Midrand, Johannesburg, the Innovation Hub is a testament to the company’s continued commitment to Africa and its valued partners.

Furthermore, it brings Schneider Electric’s vision for sustainability and digitalisation to life, ensuring that customers, partners, and stakeholders across the continent have direct access to groundbreaking innovations that can transform industries and drive meaningful progress.

The Innovation Hub also joins the ranks of Schneider Electric’s over 40 registered global Innovation Hubs, standing shoulder to shoulder with its international counterparts, offering the absolute latest in technology and sustainable solutions.

Like its global peers, the hub is a fully interactive environment where visitors can explore the company’s integrated solutions spanning critical segments such as energy, buildings, data centres, industry, and power and grid.

“We are building an ecosystem that thrives on collaboration, innovation, and relevance to the African context, one that values local talent, fosters local partnerships, and drives local solutions. The Innovation Hub is an important step forward in enabling our customers and partners with leading technologies that can shape Africa’s future while advancing global sustainability ambitions,” says Canninah Dladla, Cluster President for English-speaking Africa at Schneider Electric.

A tailored, engaging experience

The Innovation Hub offers a fully customised and guided experience for every visitor,

ensuring they interact with the newest innovations in the Schneider Electric portfolio.

Visitors are introduced to the company’s story through an interactive touchscreen before exploring tailored spaces, including:

The Software Portfolio, featuring AVEVA Operations Control, eTAP, and various EcoStruxure software solutions.

- **Industrial Automation Solutions**, showcasing live conveyor systems, EcoStruxure Plant and Machine control units, sensors, and industrial intelligence.
- **Building Solutions**, demonstrating advanced control technologies for access, lighting, HVAC, and room management.
- **Power and Grid Solutions**, featuring Schneider Electric’s acclaimed SF₆-free AirSet switchgear, protection relays, and microgrid solutions.
- **Secure Power displays**, including a live server room demonstrating Schneider Electric’s data centre and UPS solutions. Designed as a flexible, evolving space, the Innovation Hub constantly adapts to ensure the latest innovations from Schneider Electric are always on display.

The hub is also accessible to partners, consultants, and system integrators, who can book the space to demonstrate specific solutions to their clients. Each session can be tailored to showcase industry-specific applications, ensuring that businesses and stakeholders receive real-world insights into how Schneider Electric’s technology can drive success.

The Innovation Hub is backed by a team of skilled Innovation Hub Managers and Operations Specialists, ensuring expert guidance and a tailored visitor experience.



“We are building an ecosystem that thrives on collaboration, innovation, and relevance to the African context, one that values local talent, fosters local partnerships, and drives local solutions. The Innovation Hub is an important step forward in enabling our customers and partners with leading technologies that can shape Africa’s future while advancing global sustainability ambitions,”

- Canninah Dladla, Cluster President for English-speaking Africa at Schneider Electric.

Additionally, Schneider Electric is expanding its global Innovation Hub Ambassador Programme, training even more employees to bring a wealth of expertise from across the organisation, enhancing every visit to the facility.

Designed for sustainability

The Innovation Hub is housed within Schneider Electric’s new English-speaking headquarters, which truly represents the pinnacle of sustainable building design and operations.

With a 20% smaller footprint than its previous premises, the headquarters delivers significant sustainability gains, including:

- 37% lower energy consumption per month.
- 34% less water usage per month.
- 32 tonnes of CO₂ emissions reduced monthly.

Further amplifying its environmental performance, the headquarters boasts a 200 kWp rooftop solar installation, mitigating 15 tonnes of CO₂ emissions each month. Also, plans are underway for a full microgrid solution with battery energy storage (BESS), reinforcing Schneider Electric’s drive toward

renewable and sustainable energy practices. Schneider Electric’s EcoStruxure Buildings Operation and Power Monitoring software seamlessly integrates into the Innovation Hub, providing intelligent control over lighting and HVAC systems in customer-facing areas.

Through the Innovation Hub, Schneider Electric is undoubtedly strengthening its commitment to its partners and customers across the continent, ensuring that Africa’s industries benefit from the very best in technology, innovation, and sustainability.

Reserve your spot now and take the first step towards innovation!

Find out more (or reserve your spot): <https://cloud.go.se.com/InnovationHubJohannesburgBooking>

You can also scan to reserve your spot





Comtest shares tips on maintenance and health of battery storage systems

Loadshedding has transformed battery systems from backup equipment to business-critical infrastructure, making proper maintenance more important than ever. How do lead-acid batteries compare to lithium-ion options? Comtest shares tips on how to get the most out of battery systems.

Different options

Lead-acid batteries are common – they're in cars and start generators. These solid workhorses are cheap and reliable but require a lot of maintenance. Meanwhile, Lithium-ion is one of the newest commercial battery types, accounting for the largest operational installed capacity share. They are lightweight, have a high energy density, and can be fully depleted without issue. This is important with variable solar energy, which won't always be able to charge the battery.

How to maintain batteries

Batteries are sensitive. They work best between 15 °C and 35 °C and require a charge controller to receive a specific amount of current. At low temperatures, the electrochemistry is slowed, and at high temperatures, internal corrosion is increased.

Many people have experienced a car not starting in cold temperatures – that's because the battery cannot deliver as much current. In cold climates, use a battery heater or thermal insulation, and in hot climates, store them in shaded, well-ventilated spaces.

Another issue is terminal corrosion. This happens when hydrogen gas is released from the acid in the battery, reacting with other substances, or electrolyte

leaking from overfilling with water or overcharging. To remove corrosion, use an antioxidant material as recommended by the manufacturer.

For lead-acid batteries, it is crucial to maintain a high state of charge (SOC). Lead-acid batteries have a low depth of discharge, meaning a small amount of their total capacity should be used. A too-low SOC can lead to sulfation, a build-up of small sulphate crystals on the terminals, which reduces performance, according to Comtest.

To handle sulphation on the terminals, techs need to keep the SOC high, and if it gets too low, use a desulphating battery charger to dissolve the sulphates with high-frequency electronic pulses. Also, an alarm can be used with a visual and audible indication to alert to a low battery state of charge (50% for lead acid).

How to diagnose battery health

Techs need to know the internal health of the battery to maintain it. Using the Fluke 500 Series battery analyser (available locally from Comtest) will connect the leads to the negative and positive terminals and turn the switch to milliohms (mΩ). The display will simultaneously read battery voltage and internal resistance. Low voltage indicates a low state of charge, and high internal resistance means internal deterioration.

It is essential to test the battery in an open-circuit state (after 24 hours for lead-acid batteries). The analyser corrects for temperature to ensure accuracy, saves up to ten thresholds, and sends the readings to the Fluke Battery Management Software for viewing trends.

Capacity loss refers to the battery storing less charge. Techs can determine the

capacity loss using the analyser in discharge mode, where the battery voltage is read multiple times until it drops below the cut-off voltage, which can cause damage.

A hydrometer, which measures the relative density of liquids, can also be used to measure electrolyte specific gravity, an indicator of a battery's state of charge.

Evolution of energy storage technology

Although more expensive than lead-acid batteries, lithium-ion batteries represent a significant improvement in terms of maintenance, according to Comtest. While you need to regularly check their SOC and keep them as close to 25 °C as possible, they have higher energy density, making them lighter. They also have a higher depth of discharge, meaning much of their charge can be depleted before recharging, which is great for variable solar and wind power.

Thermal runaway, in which overcharging, a short circuit, or high temperature creates a feedback loop that rapidly accelerates temperatures until explosion, is an issue. Using a cathode with a higher temperature tolerance, such as iron phosphate (FePO₄), mitigates thermal runaway.

New battery technologies, such as saltwater and liquid metal batteries, which promise both low maintenance and cost, are coming on the market.

Importance of battery maintenance

The answer to whether batteries are worth it for a facility comes down to priorities and costs. Lead-acid batteries have low upfront costs but high ongoing maintenance costs, including weekly cleaning, testing, and top-up tasks. On the other hand, lithium-ion batteries have high upfront costs but low



ongoing maintenance costs.

Regardless, as the costs of lithium-ion and other non-lead acid batteries decline and the adoption of solar and wind energy grows, batteries will become an increasingly essential part of a facility, Comtest predicts.

Enquiries: www.comtest.co.za

Is there space for generators in the new energy mix?

Contrary to their reputations as noisy and dirty, generators are a key part of modern energy supplies, according to WEG. Generators have always been reliable electricity workhorses in times of need. But now they are also becoming welcome additions to modern energy mixes through efficiency improvements, noise reductions, and flexible design choices.

Energy's changing reality

Global electricity demand is surging.



Louis Kotze, executive, Generator Sets Division, WEG Africa.

According to the International Energy Agency (IEA), the world's need for electricity grew by 2.2% in 2023, accelerating at an average 3.4% annually through 2026.

Renewable energy sources like solar and wind are rapidly gaining prominence. Yet, most renewable sources are inherently intermittent, dependent on weather conditions and vulnerable to fluctuations. Energy storage systems are not universally applicable, especially for demanding industrial applications such as "soft-starting" heavy machinery. Moreover, unforeseen power outages and critical situations demand immediate, reliable energy.

A sustainable energy mix requires both renewable and instant energy sources. Generators are often overlooked and stigmatised, but they play a pivotal role in ensuring the stability and reliability of this evolving energy mix, says Louis Kotze, executive of WEG Africa's Generator Sets Division.

"Modern generator technology has taken big steps forward from the noisy machines we think of. A combination of higher efficiency standards and lower noise is making generators a crucial part of supporting renewables in high-demand energy applications."

Reliable power for green systems

Sectors such as manufacturing, data centres, and commercial businesses require consistent, reliable power to maintain productivity and prevent costly

disruptions. While solar and wind systems can carry some of those requirements, their intermittent nature creates gaps in energy supplies.

Generators serve as a bridge between abundant renewable energy and the practical demands of a 24/7 world. Modular and responsive generators provide the necessary stability, acting as on-demand power sources, seamlessly transitioning when renewable output falters.

"The fact is that the wind can stop, and the sun has to go down," says Kotze. "You can store power in backup systems, but they have limitations. Generators close those gaps with quick and high-quality electricity. They provide emergency and base-level power when other systems cannot. With the right site design and maintenance, these generator systems are very efficient and cost-effective."

An efficient energy source

Criticisms against generators include air and noise pollution. However, modern generators adhere to strict efficiency standards that minimise fuel consumption and emissions, explains Kotze. Diesel engines, for instance, have undergone significant improvements, incorporating technologies like Selective Catalytic Reduction (SCR), Exhaust Gas Recirculation (EGR), and Diesel Particulate Filters (DPF).

These innovations greatly lower the amount of nitrogen oxides and particulate matter that are released into the air, meeting

strict environmental standards. Modern generator OEMs such as WEG also invest in noise-reduction technologies, taking care of a very common complaint about generator operations.

"Noise is one of the biggest problems with generator sets, and we're heavily invested in reducing generator noise levels. For example, we use innovations such as acoustic louvres that keep noise levels under 65 A-weighted decibels," says Kotze.

Filling the energy gap

The versatility of generators is evident in their diverse applications. From small portable units to integrated grid-scale systems, generators function as crucial backup power for critical infrastructure like healthcare facilities. They provide reliable power for industrial sites, mining, and manufacturing. They support modern digital infrastructures, such as telecommunications and data centres. They also play a crucial role in emergency response operations and transportation hubs, ensuring continuity during crises.

New energy mixes integrate various energy sources. Renewable energy offers abundant and affordable power, while reliable sources capable of rapid and consistent output complement it.

"Rather than being relics, modern generators are the crucial backup muscle in the new energy mix," concludes Kotze.

Enquiries: <https://www.weg.net/>



High-performance luminaires for Engen Carlswald service station

BEKA Schröder is proud to have provided the complete undercanopy, building exterior, and perimeter lighting solution for the newly developed Engen Carlswald service station in Midrand, Gauteng.

Commissioned in 2024, Engen Carlswald forms part of Engen's expanding network of service stations. BEKA Schröder's lighting solution forms part of Engen's LED Roll-Out Programme, with all luminaires fully approved for use across multiple sites. Designed and manufactured in South Africa, the luminaires are designed to withstand the country's demanding environmental conditions, ensuring reliability and an extended product lifespan.

Undercanopy lighting

The LEDTEC was selected for the undercanopy lighting due to its sleek design, versatile mounting options, outstanding performance, and cost-effectiveness. The LEDTEC is an LED lowbay range designed for energy-efficient lighting in industrial, commercial,

and petrochemical retail environments. Optimised to deliver the best overall performance for lowbay applications, the LEDTEC outperforms all other LED lowbay luminaires thanks to the substantial energy savings it generates and the performance it delivers over time. The LEDTEC can be used in hazardous environments where a Zone 2 or 21/22 rated luminaire is required. The optional battery backup version is the perfect solution for power supply interruptions. It provides up to four hours of backup lighting and uses a fast-charging inverter, hence it charges up in time for the next power supply interruption cycle.

Building exterior and perimeter lighting

The LEDLUME 1 luminaire was used to light the building exterior and perimeter, creating a safe and welcoming environment for customers. It was selected for its high performance and



visually appealing design.

Available in four sizes, the LEDLUME range offers optimised photometrical performance with a minimum total cost of ownership. It provides energy savings, improves lighting levels and reduces maintenance costs. The

great variety of high-performance optics optimises the photometric distribution for each specific application to achieve minimum energy consumption.

Enquiries: ct@beka-schreder.co.za

Why LED retrofits are the smartest investment in 2025

As we move further into 2025, the demand for sustainable, cost-effective, and high-performance lighting solutions has never been greater.

For commercial buildings across Africa and beyond, retrofitting outdated lighting systems with LED technology is proving to be not just a smart choice but an essential one. Aurora Lighting Africa has been at the forefront of this transition, delivering advanced lighting solutions tailored to a wide range of verticals, including retail, commercial, industrial, and hospitality sectors.

Driving cost efficiency

One of the strongest arguments for LED retrofits is financial. Traditional fluorescent and incandescent lighting systems are expensive to operate and maintain. In contrast, LED technology consumes significantly less power and has a much longer lifespan, often exceeding 50,000 hours. This translates to immediate and long-term savings on energy bills, reduced maintenance costs, and lower replacement frequency.

For our commercial clients, such as office parks and corporate buildings, Aurora's Backlite+ LED Panel and Downlight ranges have delivered up to 70% energy savings, with zero compromise on light quality or performance.

Elevating the retail experience

In retail, lighting is more than just functionality; it defines ambience, influences customer behaviour, and showcases products in their best light. Aurora's extensive range of wattage and colour-selectable LED downlights and track lighting with dimmable options allows retailers to create dynamic spaces that attract and retain customers. These retrofit solutions are designed to be seamlessly installed into existing locations, minimising disruption during operational hours.

Industrial strength and reliability

Industrial environments require rugged, efficient, and safe lighting. Aurora's range of LED anti-corrosive and high bay solutions is engineered for high-dust, high-moisture, and high-impact settings, making them ideal for warehouses, factories, and logistics hubs. Retrofitting industrial sites with LEDs reduces downtime, enhances visibility, and improves worker safety, all while slashing electricity usage.

Hospitality that shines

In the hospitality sector, ambience is everything. Whether it's a boutique hotel, a resort, or a fine-dining restaurant, lighting sets the mood and enhances guest experience.



Aurora's LEDline LED Strip range, consisting of single colour, RGB, and colour-tunable options, enables full control of brightness, colour temperature, and scheduling through wireless control, giving hospitality managers the flexibility to optimise settings for different times and events. Aesthetics, comfort, and energy savings go together.

A sustainable vision

Aurora Lighting Africa views LED retrofitting as more than just a product switch; it's a step toward sustainable development and climate responsibility. Its commitment is to provide scalable, efficient, and future-proof lighting solutions that empower businesses and communities across Africa.

As utility costs rise and sustainability regulations tighten, the case for LED retrofits only grows stronger. Retrofitting is not just the smartest investment in 2025, it's the most responsible one, according to Aurora. "Let's light the way forward."

"At Aurora Lighting Africa, we're seeing strong demand across all verticals retail, commercial, industrial, and hospitality for high-performance LED systems that deliver measurable savings and human-centric design. Retrofitting with LED is no longer optional it's essential," said Scylagh Clunnie, managing director, Aurora Lighting Africa.

Enquiries: info@aurora-africa.com

Back to basics (and braais): A light that gets what really matters

In a world full of smart fridges, virtual assistants, and toasters that need firmware updates, it's good to know some things don't need reinventing. Like the braai. Fire, tongs, and a bit of patience – that's the real magic. But if there's one upgrade that does make sense, it's being able to see what you're doing once the sun goes down.

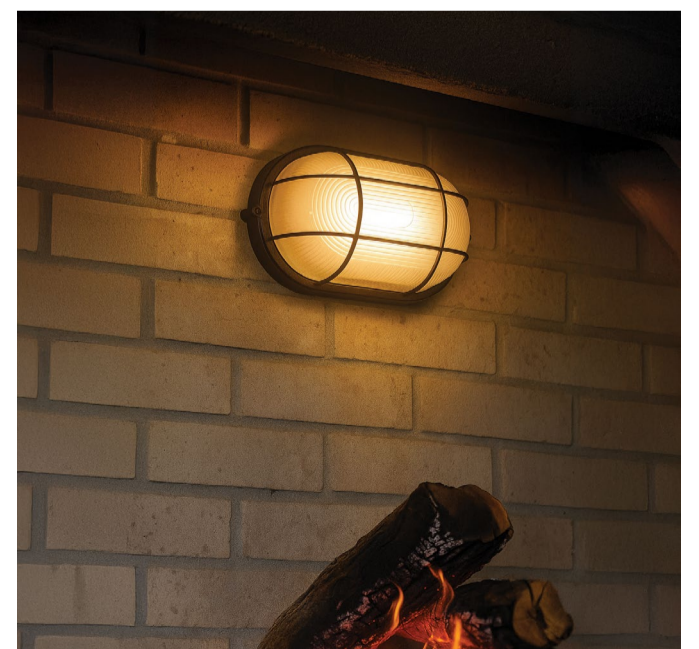
Enter the Eurolux Braai Light. A rugged, no-nonsense bulkhead built specifically for built-in braais and proudly made with South African realities in mind. Available in two sizes (B301 and B302), this is one of those rare products that hits the sweet spot between practical and purposeful.

Made from durable die-cast aluminium, fitted with a protective grid and heat-resistant silicone gasket, and armed with a 600 mm high-temperature silicone cord, this fitting is ready for whatever your fire (or the weather) throws at it. Add a Qi R7s halogen lamp, and you've got focused, bright light that makes medium-rare a reality, not a guess.

Designed with purpose, the Eurolux braai light brings the right light to where it's needed most. Backed by a three-year warranty, it's lighting that understands what matters: reliability, simplicity, and making sure your steak's done just right.

"Because at the end of the day, some things should stay old-school. But decent lighting? That's a modern essential – and Eurolux gets it," the company said.

Enquiries: www.eurolux.co.za





Sensor technology for quality of life in cities

Smart city concepts allow cities and municipalities to adapt to efficient resource management and improve the quality of life for residents. Traffic, energy consumption, and waste disposal can all become more sustainable with the help of real-time data collected by sensors. In addition, today's urban areas are increasingly typified by smart buildings with a power supply that is as autonomous and sustainable as possible.

To equip a city with suitable sensors, different requirements need to be taken into account. Sensors that process optical information require light to achieve optimum results. The sensors' power supply must also be guaranteed. In addition, different areas of application also require different types of sensors. Solutions that address these challenges and are therefore suitable for use in cities are available. Tridonic has developed the SensorX, which offers various advantages for use in public spaces and also ensures data is protected.

State-of-the-art sensor technology for use in the city

SensorX, Tridonic's AI-based sensor, allows street lighting to be optimised efficiently and sustainably. Its technology saves energy, reduces light emissions and enables precise detection and differentiation of road users, helping to contribute to the smart planning of public spaces and transport systems – always with a focus on data protection and innovation.

Today's motion sensors detect when something moves within the radius of the sensor, making them very reliable inside buildings. In outdoor areas, however, motion sensors are prone to error. Depending on the setting and surroundings, they can also be triggered by animals, trees or even heavy rain showers or snowfall. This inaccuracy leads to the lighting being incorrectly triggered and thus to avoidable power consumption. The new SensorX, on the other hand, uses image processing (machine vision) to deliver precise results.

"Many machine vision solutions require a lot of computing power and electricity and are therefore not economical or sustainable

enough for widespread use," explains Eduardo Pereira, product manager, Outdoor Controls at Tridonic. "With the SensorX, we have succeeded in reducing the power and hardware performance requirements of the device itself to a minimum. The magic happens in the interaction between the hardware and software and offers the perfect solution for use in cities, allowing us to save data, costs, and electricity."

For the analysis, the SensorX captures up to five images per second. Images are processed in the sensor itself. They are used exclusively for the analysis, are not saved and cannot be exported. The SensorX has no internal memory and complies with data protection regulations, which means it can be used without hesitation in urban environments.

Access to the sensor for set-up or readjustment is protected; access by third parties is not possible. For this purpose only, images are transmitted to a smartphone or tablet to enable the definition of zones. In this case, the transmission is encrypted. Only the zones that are individually defined during commissioning are analysed. The sensor then only takes movements in this area into account and recognises that something is moving in the selected zone. In future, it will also be possible to distinguish between pedestrians and cyclists and even recognise different types of vehicles.

Simple installation and retrofitting

The SensorX is installed directly on the Zhaga-D4i of the streetlights, making it ready for use immediately after installation and set-up. If local authorities already use luminaires with a Zhaga-D4i interface, the SensorX can be easily retrofitted, transforming the streetlights into smart components in just one easy step. Firstly, installing SensorX on the streetlight ensures sufficient light is available to the sensor at all times. The sensor has a light detector that regulates the lighting conditions so that movements can be reliably detected. Secondly, it uses the existing power supply of the luminaire. This type of installation is only possible thanks to the economical consumption of less than one watt, making the SensorX DALI type

B-compliant.

Data and information obtained through image processing are transmitted via DALI to lighting control systems for street and park lighting, city management systems or software for controlling traffic light systems. The data can then be analysed or used to control the systems directly.

Targeted lighting

Sensor-controlled lighting offers a range of benefits, ensuring greater safety on roads and paths, for instance. The SensorX detects when pedestrians or vehicles are in the vicinity. This information can be used to programme adaptive lighting scenarios, for example, to dim the lights during low-traffic periods and brighten roads and paths again when the traffic flow increases, allowing people to move around at night with safely illuminated streets and paths without the need for the entire city to be always illuminated.

Using SensorX in this way also has another positive side effect: illuminating the paths only when they are being used reduces light emissions, because when there is nobody on the roads, less light is needed. Sensor-based lighting control, therefore, not only helps improve safety but also the well-being of the population. In addition, spot lighting and dimming during quiet periods saves electricity and thus reduces municipal energy costs. In a pilot project in which one sensor controlled up to five lights, this led to potential savings of around 50%.

Real-time parking space management

Sensor-based occupancy displays are nothing new in car parks and underground car parks. Until now, urban planners have often relied on magnetic sensors embedded in the pavement or flooring. When used outdoors, however, these sensors are often prone to errors, for example, during a heavy snowfall. And if the parking area is changed, they also have to be painstakingly dug up and relocated. In the long run, this is not only inconvenient but also expensive and leaves little scope for flexibility.

With the SensorX, the parking zone can be precisely defined during commissioning. The sensor then analyses the average presence of vehicles in the selected area over the previous ten minutes and indicates the areas in which vehicles are parked. If

changes to the parking spaces require the parking zones to be redefined, this can be done on site in just a few minutes using a smartphone or tablet via Bluetooth, without having to remove or modify the sensor.

The future of sensor technology

Another area of application for the SensorX is currently in the development and test phase. Measuring traffic density and optimising traffic flow offers many possibilities beyond lighting control. The sensor counts how many vehicles pass through the specified zone at definable intervals of 20 seconds to ten minutes. The resulting data will enable urban planners to draw important conclusions, helping them see where traffic jams and tailbacks often occur and which roads are used more or less frequently than expected. Using this data, they will be able to optimise road layouts, adjust traffic light sequences or open up additional lanes for traffic.

In future, it will be possible to monitor urban traffic jams even more closely and to prevent them by measuring the data, thereby reducing CO₂ emissions. This technology can also be applied in parks and green spaces, potentially to re-naturalise underused paths or create new paths based on movement patterns.

Sensors can therefore be installed in almost all public places in the city to ensure greater safety and smoother traffic. They help urban planners optimise road traffic and ensure greater safety for road users. The money saved thanks to the lower power consumption means the cost of installing the sensors is usually amortised in the first year. The technology also helps protect the climate and make our cities smart.

Enquiries: <https://www.tridonic.com/>

AUGUST 2025 FEATURES

- MCCs and motor protection
- Energy efficiency
- Lighting

SEPTEMBER 2025 FEATURES

- DBs, switches, sockets and protection
- Industry 4.0 and Automation
- Lighting



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