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MAY 2025

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# TRINASOLAR CHARTS A DECADE OF SA'S SOLAR MARKET EVOLUTION

By Ilana Koegelenberg


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After more than ten years of operations in South Africa, Trinasolar has established itself as the market leader in solar panel technology. **Sparks Electrical News** met up with Zaheer Khan, South Africa regional director of Trinasolar, for an exclusive interview at the recent Solar & Storage Live Africa exhibition at Nasrec, Johannesburg. Khan shared insights about the company's journey, market positioning, and the future of solar energy in the region.

### Standing tall among competitors

In an industry flooded with newcomers, Trinasolar's 28-year global presence gives it a significant edge, according to Khan. With solar panels typically carrying a 25-year warranty, Trinasolar's longevity in the market provides customers with confidence that the company will exist to honour these long-term commitments – something newer entrants cannot match.

"Trinasolar has been in business longer than our warranty, so that says something," explained Khan.

The company's local commitment is demonstrated through offices in Johannesburg and Cape Town, alongside warehouse facilities in Durban that maintain 10-20 megawatts of stock for quick nationwide delivery.

Rather than relying solely on self-promotion, Khan pointed to independent verification of their products' superiority. PV Evolution Labs, one of the most credible organisations globally, has conducted an independent reliability analysis of solar panels, testing multiple parameters, including thermal cycling, damp heat resistance and light induced degradation, amongst other factors. Their findings show Trinasolar has been a top performer for the past decade. This quality assurance is further bolstered by TUV certification, with Trinasolar recently receiving the highest possible double A rating on supply chain traceability, a hot topic in the ESG space.

### A decade of market transformation

The South African solar market has undergone dramatic changes over the past decade. "Our customers have become much savvier, better educated and better informed about the products and features they want, as well as who the reputable sellers are," noted Khan.

Price reductions have been substantial, with panel costs halving in just the last two years. This drop has made yet more projects economically viable as solar-generated power has long since passed the threshold of being cheaper than Eskom-supplied electricity.

Government policy improvements have enabled large-scale private company involvement, leading to exponential growth in the private market. "Initially, we used to rely on government programmes, but nowadays, we see a lot of even utility-scale projects coming from the private market," Khan explained.

### Market-responsive product range

For the residential market, Trinasolar offers a diverse product range. While their 9 series panels (450 W) with black frames and lightweight design should theoretically be the most popular, South African consumers have shown a preference for higher wattage options in their 500–600 W range.

# Introducing TCI Africa

Africa is embracing a significant shift towards sustainable and innovative lighting technologies, and therefore, the launch of TCI Africa marks an exciting milestone in this transformation. Backed by TCI Italy and its renowned CEO, Dott. Gianfranco Librandi, TCI Africa embodies his firm belief in Africa's immense economic potential and strategic role in global innovation.

**As TCI Africa, we invite businesses, municipalities, and innovators throughout Africa to participate in a partnership that promises significant and sustainable outcomes.**

**Dott. Gianfranco Librandi, TCI Italy CEO**

Librandi, an influential figure recognised both for his dynamic leadership of *Telecomunicazioni Italia* (TCI) and his extensive political and economic accolades in Europe, sees investment in Africa as a meaningful collaboration with potential for mutual growth and shared prosperity.

For over 40 years, Librandi has successfully steered TCI Group to prominence within the international lighting sector. His visionary approach and dedication to innovation have earned him respect as a business leader who continually pushes technological boundaries.

TCI has become synonymous with reliability and cutting-edge LED drivers, Internet of Things (IoT) solutions, and smart lighting systems used globally.

The expansion into Africa represents TCI's strategic vision to align proven excellence with the unique opportunities and challenges of African markets.

Central to TCI Africa's mission is a commitment to focus on customer needs, authentic collaboration, innovative solutions, and significant local investment.

Understanding Africa's distinctive energy landscape and infrastructural needs, TCI Africa aims to deliver "fit for Africa" lighting solutions, explicitly tailored to enhance regional growth, sustainability, and technological advancement.

The company's approach prioritises not only economic growth, but also a commitment to supporting Africa's unique potential for innovation in the lighting industry.

TCI Africa was formed as a corporation between TCI and KAGA Trust, a local partner in South Africa. Headquartered in Cape Town, TCI Africa operates under the joint leadership of Adrian Dalton and Roberto Campi. Together, and with the support from the highly capable Italian team, they blend local insight with international expertise to deliver lighting solutions perfectly tailored to the continent's unique needs.

"As TCI Africa, we invite businesses, municipalities, and innovators throughout Africa to participate in a partnership that promises significant and sustainable outcomes," said the company.

Leveraging TCI's global reputation and localised support, TCI Africa is uniquely poised to become a pivotal contributor to the African Lighting Industry.

"Africa, your lighting partner, has arrived – ready to illuminate a brighter and more prosperous future together."

**Enquiries: a.dalton@tci-africa.co.za**

## Beyond the hype: making the right choice

Ilana Koegelenberg

As I walked the familiar halls of the Nasrec expo centre during the recent Solar & Storage Live Africa event, I couldn't help but be in awe of the technology around me. Exhibitors really went all out with their stands this year, and I almost felt like I was back at those massive international trade shows I used to attend, like ISH in Germany or MCE in Italy.

One thing became abundantly clear as I navigated among the stands: we definitely don't have a shortage of technology choices in this country. Every application, every size – it's all covered in South Africa's thriving solar market.

Smaller panels, greater efficiencies, longer warranties, more affordable options – everywhere I looked at Nasrec, there was another upgrade or product launch promising to outshine its predecessor. Which raises an important question: how on earth does one choose which brand to support?

With increased product choices comes increased risk and complexity in decision-making. Taking the time to thoroughly compare options and understand exactly what your project needs, is essential. Too often, solar systems are either over-sized or under-sized, rendering them ineffective or inefficient.

This is precisely why educating yourself (and your customer) is so important. Big claims of superior products mean nothing without verified results to back them up. Consider factors like company longevity, local footprint and support infrastructure, and comparable case studies or success stories before making your decision.

An easy way to stay abreast of new technology and trends is to read your Sparks magazine every month. Our May edition is packed with solar articles, including our cover story featuring an exclusive interview with Zaheer Khan, South Africa regional director of Trinasolar – a market leader with 28 years in the industry globally and more than a decade in South Africa. Khan shares unique insights into how our local solar industry has transformed over the past ten years.

To discover what else happened at the Solar & Storage event, check out our comprehensive post-event write-up on page 4.

We also have a dedicated Energy Efficiency section in this edition, examining why your solar savings might not be adding up (page 10) and exploring whether the local solar boom is indeed winding down (page 11).

Our other feature this month covers Earthing, Lightning, and Surge Protection. On page 6, ACDC Dynamics examines external lightning protection systems, while on page 7, the Earthing & Lightning Protection Association (ELPA) investigates the importance of a consistent risk assessment.

In our regular Lighting feature, we spotlight Eurolux's day-night sensors (page 13), Aurora Lighting Africa's new high-performance lighting solution (page 14), and BEKA Schréder's sustainable streetlighting solution for Ballito Village (page 15), among others.

That's my news, what's yours?

Just a reminder: if you have any stories to share, feel free to drop me an email at any time.

For now, happy reading (and learning).

Ilana Koegelenberg

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# TRINASOLAR CHARTS A DECADE OF SA'S SOLAR MARKET EVOLUTION

In the commercial sector, Trinasolar's 615/630 W panels from the 19 range have become the dominant choice. These panels feature innovative rectangular cells that Trinasolar pioneered in the industry. The design reduces current output from 17 amps to 15 amps, creating an ideal match with the latest range of commercial inverters. Since these inverters have 30-amp inputs, installers can connect two panels in parallel for perfect compatibility – a practical engineering solution that has resonated with South African commercial clients.

Trinasolar has also modified some of its products to suit local conditions. At the recent Solar & Storage Live Africa exhibition, they launched a more hail-resistant panel certified for hailstones up to 55 mm in diameter – more than double the 25 mm industry standard. Their panels also feature anti-dust properties and aluminium frames to prevent corrosion, making them well-suited to South African conditions.

### Technological advancements

While all solar panels may appear similar to the average consumer, the technology has advanced considerably. Trinasolar holds over 2,000 patents and has recently developed a groundbreaking 800W+ panel using perovskite silicon tandem cells.

The efficiency of solar panels continues to improve, with current market standards at 23-24%, while new tandem cell technology promises efficiencies above 30%.

Application innovation is also expanding, with floating solar becoming more popular, particularly in freshwater environments. Trinasolar has recently launched panels certified for marine environments, further broadening potential use cases.

### South African challenges

Despite massive growth and opportunity, Khan also identified several challenges unique to the South African market. Unlike European markets that incentivise solar adoption through subsidies and feed-in tariffs, South Africa seems to disincentivise it. "People are getting penalised for installing solar locally with Eskom's proposed connection charges and time-of-use tariffs for solar users," he explained.

Another challenge in the local market is the need for certification for installers to ensure a uniform installation standard. Khan highlights that some installers use panels with incorrect electrical ratings for their chosen inverters. "Inverters are only rated to handle a certain amperage and to operate up to a certain voltage. So, you need to ensure your setup doesn't exceed these ratings. That's a key factor for smaller installers," he warned.

### A changing value proposition

In South Africa, initial barriers to entry included customer education about photovoltaic technology versus solar water heating and developing grid connection standards, which, while more mature now, continue to evolve. This is less of a problem these days as customers and installers become more familiar with the technology.

The evolution of solar's value proposition has been particularly noteworthy. From being initially driven as a solution to loadshedding, the industry has shifted toward emphasising financial benefits and environmental sustainability.

As Khan noted, "With loadshedding over the past few years, the big selling point, especially in the residential segment, was to have something that helps protect you against loadshedding. But now, for the last year, 90% of the time, we haven't had loadshedding. The value proposition had to change."

This shift has coincided with Eskom's tariff increases, making the economic case for solar increasingly compelling, even without the immediate pressure of power outages. The environmental benefits of moving away from coal-based power generation have also become a more prominent part of the conversation.

### Beyond solar panels

While primarily known for solar panels, Trinasolar has diversified its product portfolio considerably. "Solar panels are our core business, but it's a lesser-known fact that we're also a major manufacturer of solar trackers. Globally, we're also one of the top five battery system integrators," Khan revealed.

Unlike many competitors, Trinasolar manufactures its own battery cells, with approximately 18 gigawatt-hours of manufacturing capacity. This vertical integration gives them greater control over quality and supply chain resilience.

### Future outlook

Looking ahead, Trinasolar plans to expand into neighbouring sub-Saharan African countries that have yet to reach South Africa's level of solar penetration. With its current position as market leader in South Africa, the company is well-positioned for regional growth.

The strategy focuses on both geographic expansion and product diversification, with particular emphasis on new applications.

As Trinasolar celebrates its decade in South Africa, it stands as both a witness to and driver of the country's energy transition. From educating consumers about the basics of photovoltaic technology to now delivering highly specialised products for specific applications, the company's evolution mirrors that of the broader market – increasingly sophisticated, economically viable, and poised for continued growth despite regulatory challenges.

As Khan said, "The evolution continues."

**Enquiries: www.trinasolar.com**


# African Solar & Storage event sets new record with nearly 20,000 attendees

**By: Ilana Koegelenberg**

The 28th annual Solar & Storage Live Africa, co-located with the inaugural EV & Charge Live Africa, welcomed almost 20,000 visitors to Johannesburg in 2025, marking its largest edition to date and showcasing the rapid growth of renewable energy adoption across the continent.

The solar and renewable energy landscape in Africa saw significant momentum at the recently concluded Solar & Storage Live Africa 2025 event, which took place 25–27 March this year. Held at a larger venue, NASREC, to accommodate the growing interest, the exhibition drew 19,982 attendees and featured 523 exhibiting brands from 110 countries.

The three-day event, organised by Terrapinn, moved to a more spacious location this year, reflecting the expanding footprint of renewable energy across Africa. The expo featured three halls displaying the latest solar, energy storage, and energy tech products from local and international brands.

"What an incredible year and another great event!" said Gina Bester, general manager for Middle East and Africa at Terrapinn. "This year, we moved to a larger, better venue to accommodate a larger footfall and provide the right facilities for an enhanced experience."

### EV focus expands event scope

A key highlight was the debut of EV & Charge Live Africa, which focused on electric vehicle adoption and charging infrastructure development in African markets. This addition expanded the event's scope beyond traditional solar and storage technologies to encompass the broader renewable energy ecosystem.

The EV & Charge Live Stage featured discussions on government policies and incentives, workforce upskilling for the electric vehicle (EV) industry, building sustainable EV supply chains, and the impact of electric vehicles on ESG goals and carbon reduction initiatives across Africa.

### Record-breaking attendance

With nearly 20,000 in-person attendees and close to 30,000 registrations, the 2025 edition set new records for the event series. Participants came from 110 countries, demonstrating the truly international nature of interest in Africa's renewable energy market.

The geographical distribution showed strong local participation with 60% from South Africa, 15% from Southern African Development Community (SADC) countries, and 10% each from the rest of Africa and Europe. The top 10 attending countries included South Africa, Zambia, Zimbabwe, Botswana, Namibia, Kenya, Mozambique, China, Germany, and the United Kingdom.

### Industry insights and knowledge sharing

The conference portion featured 156 speakers across multiple specialised stages, delivering insights on Africa's most pressing energy challenges and opportunities. Key topics included addressing the energy crisis, accelerating the transition to net zero, and exploring the economic and environmental benefits of solar power in Africa.

The Installers University, sponsored by Sungrow, provided practical sessions on solar system design, efficiency, monitoring, and maintenance. Meanwhile, the Future Energy Stage, sponsored by Megarevo, focused on broader industry developments.

Industry representation was diverse, with distributors and resellers (18%), large energy end users (15%), energy technology providers (12%), consultants (10%), and installers (10%) making up the largest attendee segments. Other significant groups included electrical contractors (8%), project developers (6%), utilities and grid operators (6%), and energy end users (6%).

The event introduced new value-added features, including sessions run by EUPD Research and the opportunity for attendees to earn Continuing Professional Development (CPD) credits by attending conference sessions. These additions enhanced the professional development aspect of the exhibition.

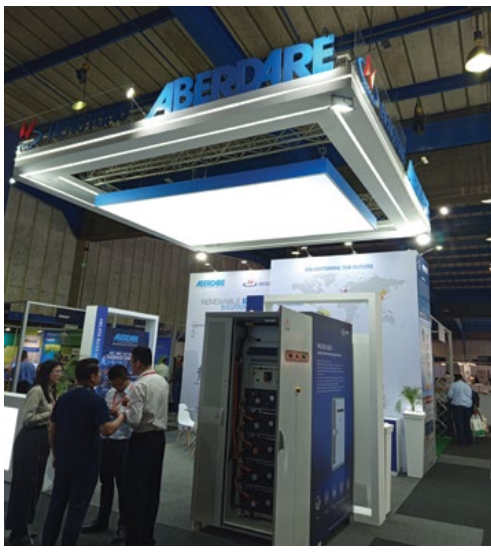
### Looking ahead to 2026

Looking ahead, the organisers have already announced dates for next year's edition, which will take place from 18–20 March 2026, at NASREC, Johannesburg. With the continued growth in attendance and exhibitors, expectations are high for an even larger event next year.

"We're excited for an even bigger and better 2026 edition and can't wait to welcome you back next year," Bester concluded.

**Enquiries: www.terrapinn.com**



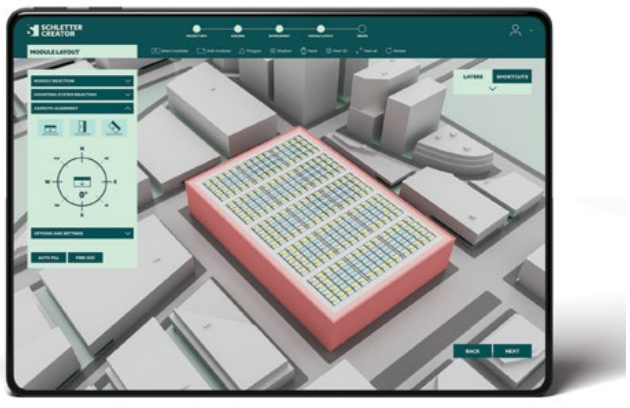






# Schletter introduces a new solar PV planning tool

Schletter Group, a global manufacturer of solar mounting systems, has completely revamped its planning tool. With the launch of the browser-based Schletter Creator, the company is introducing one of the fastest and most advanced photovoltaic (PV) planning tools in the world.

"The Schletter Creator represents a major leap forward for our users, instantly placing us among the industry's top-tier solutions in terms of speed and user experience," says Schletter Group's CEO, Florian Roos. "We can now offer our customers both premium-quality products and a state-of-the-art design tool that's among the fastest and most innovative on the market."




Key customers are already testing the tool, and it will be launched in Europe in April before expanding to markets in North America, the Middle East, Africa, and Southeast Asia later this year.

### 3D planning in Google Maps

The Schletter Creator allows users to design PV systems for any roof shape or type, with roof layouts created directly in Google Maps by marking the roof surface. After entering the roof pitch and building height, the system calculates the exact available installation area and suggests the optimal panel layout based on the desired orientation.

Unlike most design programs – which assume a default building height of 10 metres – the Schletter Creator requires users to input the actual building height. "In practice, planning errors often arise because actual building heights are overlooked, leading to incorrect load calculations," explains Dr Cedrik Zapfe, CTO of Schletter Group. "With the Schletter Creator, those errors are eliminated."

Developed using the latest programing standards, the tool delivers a seamless and ultra-fast experience and enables professional users to design and finalise a standard rooftop system in under a minute. The platform also includes all commercially available PV modules and automatically applies region-specific wind and snow load calculations based on the entered postal code or city.

Like the Schletter Calculator, the Schletter Creator leverages the world's most comprehensive load determination database. "Once the rollout is complete, we'll cover approximately 97% of PV-compatible regions worldwide and integrate our entire Schletter product range," says Dr Zapfe. "This means the Schletter Creator can be used to design systems for virtually any roof at any time from anywhere in the world."

### New: reduced ballast requirements

Another key feature is the incorporation of advanced aerodynamic calculations that account for the "group effect" among modules, which refers to how wind loads can vary within an array based on module positioning. Depending on the arrangement, wind forces may be lower on certain modules within a larger group compared to those in individual rows or along the edges – the so-called "cone effect". This new feature enables planning with reduced ballast requirements while maintaining structural integrity.

Additionally, the Schletter Creator features an API interface, allowing seamless integration with all major inverter planning tools.

**Enquiries: www.schletter-group.com**

# Biral introduces standalone lightning warning system

Biral, now part of the Senseca Group, recently launched its BTD-200 lightning warning system, a complete detection and warning system that supports safety in outdoor facilities and remote industrial sites.

South Africa is well known for its dramatic lightning and thunderstorms. These can be disruptive and dangerous, especially for outdoor facilities such as golf courses and sports fields, or even remote sites. Severe thunderstorms and lightning strikes raise risks for personnel and equipment, making protection measures essential. That's where Biral's new standalone lightning warning system comes in.

Senseca South Africa managing director, Jan Grobler says the BTD-200 delivers where many other systems fail due to its professional aviation-grade lightning technology. "The proven BTD-200 system is compact, easy to install and does not rely on secondary measurements in order to activate the warning system. Its highly specialised technology delivers the warning as soon as lightning is detected."

The BTD-200 offers detection technology that reliably detects the presence of all forms of lightning in a range of up to 35 km from the sensor. The sensor, which is quick and easy to install, is supplied complete with a universal mains voltage power supply and the essential PC server application 'Lightning Works' for monitoring, warning and data logging of approaching thunderstorms.

"For lightning detection requirements of over 35 kilometres, Biral also supplies the BTD-300 Series, which can reliably detect and range cloud-to-cloud lightning over a range of 83 kilometres, exceeding the US FAA requirements. The BTD-300 works on an electrostatic operating principle, which enables the sensor to warn of the risk of overhead lightning before the first discharge occurs. Cloud-to-cloud strikes are typically much more common than cloud-to-ground strikes," Grobler says.

When lightning discharge occurs, there is a significant transfer of electric charge which causes a disturbance in the atmospheric electric field that is detectable to a distance of more than 100 km. This low frequency disturbance is detected by the BTD-200 antenna and the signal is processed to detect and range the lightning discharge. Importantly, the BTD-200 can issue a warning of potential overhead lightning before the first strike. This is not possible using radio-based detection systems.

**Key benefits of the BTD-200**

- Fully automatic alarm triggering
- Warning of the most dangerous (overhead) lightning risk before the first lightning strike
- Advanced, automatic self-testing to ensure system operation
- An accurate 35 km detection range
- Performance in accordance with IEC 62793 for a Class A detector
- Compliance with EN 50536:2011+/A1:2012 for a Class 1 detector
- Detection of cloud-to-ground, intra-cloud and cloud-to-cloud lightning
- Detection of charged precipitation and strong atmospheric electric fields
- The detector is supplied with Lightning Works server software.

"The BTD-200 can significantly improve safety on industrial sites and it supports professional meteorological applications. The system filters out the higher frequency electromagnetic radio waves, which are often the cause of sensor confusion and false alarms on standard systems. The BTD-200 instrumentation has practically a zero false alarm rate," says Grobler.

**Enquiries:**
**www.senseca.com**

> **The proven BTD-200 system is compact, easy to install and does not rely on secondary measurements in order to activate the warning system. Its highly specialised technology delivers the warning as soon as lightning is detected.**
>
> **-Jan Grobler**

# External lightning protection: managing nature's most powerful force

South Africa is one of the most lightning-prone regions in the world. Given this, external lightning protection systems (ELPS) are essential in mitigating risk to buildings, electrical installations, and occupants.

ELPS solutions from ACDC Dynamics are engineered to safely intercept and direct lightning currents into the ground, protecting structures and critical systems. Its range includes high-quality air terminals, down conductors, and earthing systems that comply with SANS and IEC standards. The goal is not to prevent lightning from striking – it is to provide a safe, controlled pathway that channels the energy away from sensitive areas.

**Copper braids: flexible, high-conductivity earthing solutions**

Effective earthing relies on strong, conductive connections, and copper braids remain a preferred solution across industries. These flexible, multi-stranded conductors are ideal for bonding components, connecting moving parts, and ensuring a low-resistance path to earth in demanding environments.

ACDC Dynamics offers a wide range of copper braids designed for durability, flexibility, and maximum conductivity. Whether used in switchgear, control panels, or lightning protection systems, these components play a vital role in achieving continuity, reducing electromagnetic interference, and enhancing safety.

**Surge protection: safeguarding electronic assets**

In today's interconnected world, even brief voltage spikes can cause significant damage to sensitive electronic systems. Surge protection devices (SPDs) are designed to limit overvoltage by diverting transient energy safely to earth – protecting equipment and minimising downtime.

ACDC Dynamics' SPD range includes solutions for power systems, data lines, and telecommunication networks. From modular DIN-rail units to application-specific protectors, ACDC Dynamics ensures comprehensive coverage against surges caused by lightning, grid switching, and internal equipment faults.

**The ACDC Dynamics difference**

"What sets ACDC Dynamics apart is our commitment to delivering more than just products – we provide end-to-end protection solutions backed by technical expertise and national support," the company said. With an extensive product portfolio, knowledgeable consultants, and ongoing investment in training and innovation, it is well-positioned to support engineers, contractors, and facility managers in meeting today's safety and compliance requirements.

**Enquiries: www.acdc.co.za**

# The New DEHNventil: big power in a slim new design

For decades, the name DEHNventil has been synonymous with powerful and reliable lightning and surge protection. Since its debut in 1983, this robust device has stood the test of time in demanding electrical environments. Now, DEHN is proud to unveil the next evolution: a newly designed DEHNventil that delivers the same trusted performance in a slimmer, more compact package – half the width, double the convenience.

The new DEHNventil is a combined type 1+2+3 arrester as per the EN 61643-11 standard. It comes in a single compact module that is just four standard DIN modules wide – saving up to 50% of the space compared to the previous generation and many other market alternatives. This smaller footprint provides valuable space in the switchgear cabinet, allowing for easier installation, future expansion, or even the use of a smaller and more economical cabinet. For contractors and panel builders, this translates directly into cost and time savings.

What hasn't changed is the performance. The new DEHNventil maintains its superior surge protection capabilities with a follow current extinguishing capacity of up to 100 kA rms and exceptionally low residual energy, made possible by DEHN's integrated RAC spark gap technology. This ensures comprehensive protection for terminal equipment, especially within a 10 m radius of the cable length.

DEHN has also added user-friendly enhancements that make this version even more compelling. The updated design includes a remote signalling contact, enabling 24/7 system monitoring. This feature allows for predictive maintenance and more efficient deployment of service resources, ultimately reducing downtime and maintenance costs.

Additionally, the DEHNventil has been tested for vibration and shock resistance,

making it a reliable choice even in environments with mechanical stress. It's ideal for critical infrastructure, industrial applications, and any installation where reliability is non-negotiable.

Another standout advantage is its single-module construction. Unlike multi-part arresters that may require replacement of individual components, the DEHNventil ensures that once replaced, all protection modes are fully operational again – no partial protection, no guesswork. This not only increases safety but also extends maintenance intervals and simplifies servicing.

In many installations, just a few centimetres of cabinet space can mean the difference between fitting a new component or needing an entirely larger cabinet. The space-saving benefits of the new DEHNventil can lead to real savings on both material and installation costs.

To sum it up, the new DEHNventil is more than just a redesign – it's a smarter, more efficient, and more powerful way to protect electrical systems from lightning and surge events. With its combination of compact size, full-spectrum protection, and ease of use, it sets a new benchmark in surge protection technology.

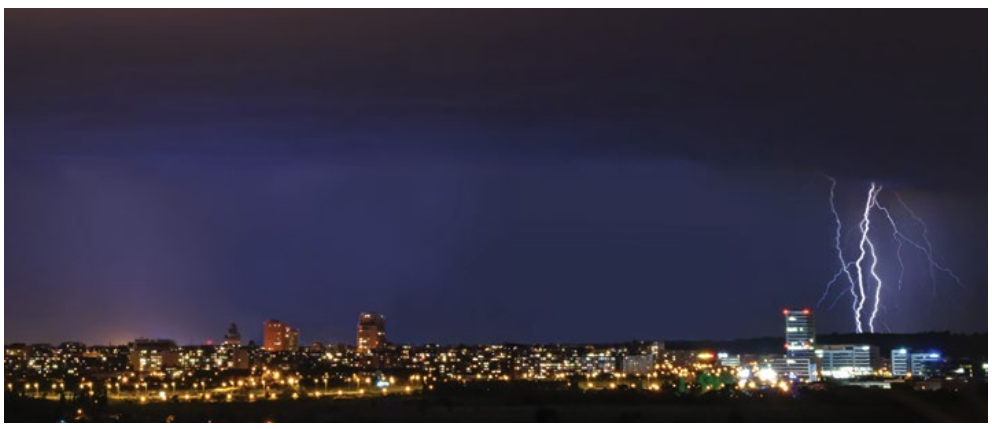
**Enquiries: +27 (0)11 704 1487**

# Securing a resilient future: the role of earthing, lightning, and surge protection in energy efficiency

As industries and households alike prioritise energy efficiency in 2025, the importance of robust electrical protection cannot be overstated. Without effective earthing, lightning, and surge protection, even the most energy-efficient systems remain vulnerable to costly failures and safety hazards. Voltex understands that safeguarding electrical infrastructure is as critical as optimising power consumption.

**The foundation: effective earthing**

A reliable earthing system is the backbone of electrical safety. Proper earthing dissipates excess electrical energy into the ground, reducing the risk of electrocution, fire, and equipment damage. In South Africa, where unpredictable weather conditions and fluctuating power supply pose ongoing challenges, investing in high-quality earthing solutions ensures the longevity and efficiency of electrical installations.



**Weathering the storm: lightning and surge protection**

With climate change contributing to more frequent and intense storms, lightning strikes are an ever-present risk to electrical systems. A single strike can cause catastrophic damage to equipment and disrupt operations. Comprehensive lightning protection – incorporating air terminals, down conductors, and earthing solutions – prevents direct strikes from causing harm.

Surge protection plays an equally vital role, shielding sensitive electronics from voltage spikes caused by lightning, power outages, or grid fluctuations. Modern surge protection devices (SPDs) are designed to respond in milliseconds, diverting excess voltage safely away from critical equipment. This is particularly essential for businesses relying on advanced automation, data centres, and renewable energy systems.

**Enhancing energy efficiency through protection**

While earthing, lightning, and surge protection are often viewed purely as safety measures, their contribution to energy efficiency is significant. Unprotected systems are prone to power disruptions, requiring costly repairs and downtime. Moreover, unstable voltage supply strains electrical components, reducing their lifespan and increasing energy wastage.

By integrating advanced protection solutions, businesses and homeowners can maintain a stable and efficient power supply. This minimises energy losses, ensures uninterrupted operations, and supports the long-term sustainability of electrical infrastructure.

**The Voltex commitment**

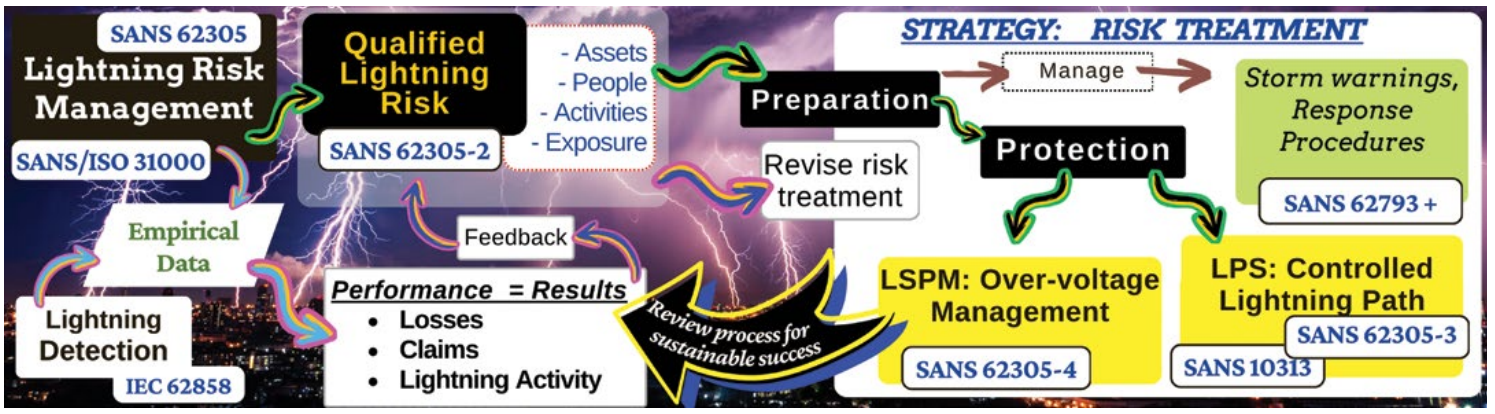
"At Voltex, we remain committed to providing cutting-edge electrical solutions that prioritise both protection and efficiency," the company said. "As South Africa continues its transition towards a smarter and more resilient power network, we stand at the forefront, offering expert guidance and high-quality products to meet the demands of 2025 and beyond."

Investing in earthing, lightning, and surge protection is not just about safeguarding assets – it's about securing a more energy-efficient and sustainable future.

**Enquiries: www.voltex.co.za**

# Lightning protection: the importance of a consistent risk assessment

By: Richard Evert of the Earthing and Lightning Protection Association (ELPA)




## Risk management

Lightning protection is fundamentally a risk management exercise that prevents financial losses through assessment based on asset owner-determined tolerable thresholds. Contrary to common belief, lightning protection is not mandated by South African law, nor will it be in the near future. Responsible protection follows the structured approach illustrated in the accompanying diagram.

## Strategy: risk treatment

An effective lightning protection solution implements a three-pronged strategy:

- Lightning Protection Systems (LPS) for direct strike mitigation
- Lightning Surge Protection Measures (LSPM) for indirect strike management
- Appropriate behavioural protocols during thunderstorms for safety and continuity

Risk assessments should be scaled to the structure and context. The costs should remain proportionate to the property's value and function, avoiding unnecessary complexity for simpler structures while ensuring comprehensive coverage for critical facilities.

## Qualified lightning risk assessment

A critical misconception is that property owners have been led to believe external parties should determine acceptable risk levels for their assets. The flow chart demonstrates how standards guide best practices, preventing both under-design and over-design of protection solutions.

LPS isn't required in every case, and confusion often exists between internal LPS requirements and separate LSPM requirements. This results in recommendations varying widely between designers – variations that asset owners mistakenly accept as normal rather than questioning designer competency.

Each structure presents unique challenges due to architectural design variations, construction methods, and diverse electrical implementations. Remote design without consultation with key stakeholders deviates significantly from established best practices.

South African industry needs clear guidance on assessment parameters and appropriate support for property owners rather than imposing unguaranteed solutions. Structures without lightning protection should be backed by risk assessments confirming such protection is unnecessary.

**Enquiries: https://elpasa.org.za/**

## About the author

**Richard serves as National Director of ELPA driving a holistic perspective, supporting service providers to deliver safer, cost-effective security in an environment with many stakeholders and commercially vested interests.**

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Pratley Putty was used to repair one of the main supports in the Golden Gate Bridge in San Francisco.


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Pratley Putty is being used to seal off holes drilled into rhino horns in the ongoing efforts of reducing rhino poaching.


Pratley Head Office in 1987 & Pratley Head Office on the occasion of Pratley's 70 year anniversary in 2018.



Pratley Putty was used to seal panels during the construction of a cofferdam as part of the Kariba dam rehabilitation.


In 2021 the new flameproof Taper-Tech® gland range is launched.


Pratliperl® thermally insulating & fireproof aggregate, is used for building lightweight concrete beehives.


Pratley Putty is being used by Oceans Without Borders to secure and restructure endangered coral reefs near Zanzibar.


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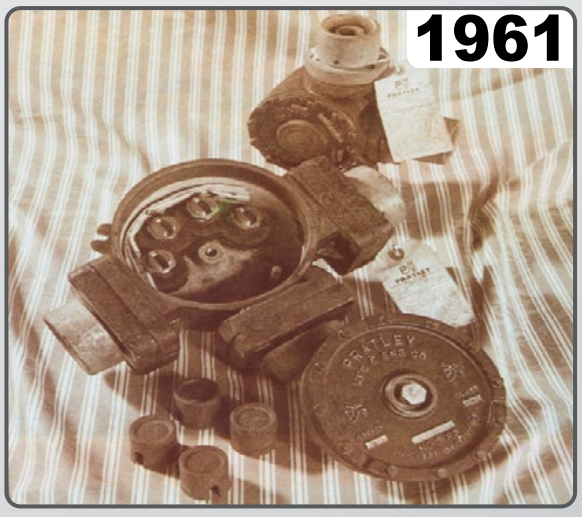
Possibly South Africa's first cable resin joint.


Pratley Putty, originally invented to secure and insulate heavy brass terminals inside Pratley Cast Iron Junction Boxes.




The world's first chemical delay fuse igniter for blasting.


On Friday the 13th of July 2018, Kim, Andrew & Charles Pratley replicated a demonstration from 1985 by standing underneath a 13-tonne bulldozer suspended above their heads using a Pratley Wondafix® adhesive joint.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The South African Mint chose the South African manufactured Pratley Putty for a limited edition coin set to commemorate the 50th anniversary of NASA's moon landing.


Pratley's world first polymeric, corrosion-resistant, direct-entry, flameproof junction box, was nominated for an award in the Technical Innovation category at the HazardEx Live 2024 Expo. This prestigious event took place on 28 February 2024 in Harrogate, United Kingdom.

In 2023 the Flameproof Envirobox® was launched and received the South African Flameproof Association Award of Excellence for Technical Innovation.



www.pratleyelectrical.com

# Securing Africa's energy future starts at home

Building inverters and lithium batteries locally that are designed for South Africa's specific needs is an incredibly promising prospect, according to ACTOM. In stimulating domestic production, industries can tackle the twin challenges of increasingly erratic grid access and spiralling energy costs.

Africa's energy demands are surging, driven by rapid population growth and industrial expansion. Industries are now frantically seeking reliable and affordable power alternatives to run their operations, but the current reliance on imported solar technology, from panels to inverters and batteries, leaves the continent vulnerable, explains Mervyn Naidoo, CEO of ACTOM.

Repairs are delayed, components become scarce, and the whole system falters when global supply chains hit a snag. "It's a fragile setup, plain and simple, and one that Africa can't afford to rely on," says Naidoo.

That's where the prospect of building inverters and lithium batteries locally, suited to local needs, comes in. According to ACTOM, this is no longer just a golden opportunity but rather a vital necessity if the continent is to meet its ever-expanding energy needs.

**A compelling case for localisation**

South Africa, a microcosm of the continent's energy struggles, illustrates the point perfectly. The nation's battle with loadshedding, a direct consequence of Eskom's inability to keep pace with demand, spurred a phenomenal uptick in solar adoption. Rooftop installations now account for an estimated six gigawatts alone, contributing to a total solar capacity of around nine gigawatts, including concentrated solar power.

This trend is not driven by loadshedding alone, as municipal infrastructure delays that lead to extended outages dragging on for days have heightened the need for independent power solutions. In the first 50 days of this year, some industrial areas endured as many as 20 to 30 days without electricity, highlighting the sheer scale of the crisis.

The global context adds a further layer of complexity. The world is pushing a renewable energy agenda, driven by the need to address climate change and decarbonisation. This, in turn, has created a giant surge in demand for components, from solar panels and batteries through to high-voltage transmission equipment. This surge in worldwide demand has saturated supply chains, causing extended lead times.

**Finding strategic advantage**

Against this backdrop, localised manufacturing of inverters and lithium battery solutions becomes unavoidable. South Africa's rising electricity tariffs, increasing at an alarming rate, make off-grid solutions more commercially viable, explains Naidoo. The cost of a standalone solar and battery system is becoming competitive with municipal tariffs, which can create the demand and economies of scale necessary to localise production – and the benefits are not just restricted to costs.

"Localising component manufacturing can create jobs, expand the economically active population and generate tax revenue – all of which stimulates economic growth and reduces the state's social burden," says Naidoo. "This approach would align with national commitments to address unemployment and equality."

**Building Africa's energy independence**

Setting up a fully localised supply chain will require careful assessment. However, intercontinental trade within Africa remains low – below 20%. As such, the African Continental Free Trade Area (AfCFTA) can be instrumental in achieving the economies of scale necessary for large-scale manufacturing, explains Naidoo. By 2050, Africa's population is expected to exceed 1.5 billion people, which presents a massive market. Drawing on the continent's abundance of raw materials such as copper, lithium and iron ore, it is possible to establish regional industrial hubs for the purpose of localising production for the entire continent.

Local production capabilities will also enhance repair turnaround times and improve accessibility to critical components. Technology transfer will enable local manufacturers to support products throughout their lifecycle, reducing reliance on imported parts and ensuring plant availability and reliability.

**Taking steps toward a sustainable energy future**

The economic and technological advantages of a domestic renewable energy industry are significant. Increased employment and tax revenue stimulate economic growth, while technology transfer strengthens local capabilities and enables innovation.

"Making a shift toward localised and decentralised energy solutions is one of the clearest ways to contribute to a more sustainable and energy-independent future for Africa, by reducing reliance on external sources to ensure long-term energy security," says Naidoo.

In this light, the development of localised energy solutions is not an opportunity, but a necessity.

**Enquiries: www.actom.co.za**

**Mervyn Naidoo, CEO of ACTOM.**

> **"Making a shift toward localised and decentralised energy solutions is one of the clearest ways to contribute to a more sustainable and energy-independent future for Africa, by reducing reliance on external sources to ensure long-term energy security.**
>
> **– Mervyn Naidoo**

# Essential strategies for adapting to local water and energy challenges

Chief actuary at Momentum Insure, Rudolf Britz, warns that solar panels, electricity inverters, battery chargers, battery packs, backup generators, and water storage systems provide much-needed relief, but come with their own share of risks.

Johannesburg's ongoing water crisis now mirrors the country's energy challenges. Some areas have gone without water for prolonged periods, while Eskom's unpredictable loadshedding adds further strain. With failing water and power infrastructure becoming a daily reality, South African homeowners and businesses are turning to alternative solutions.

Momentum Insure data shows that hail, theft, and power surge claims on solar installations more than doubled in 2023 compared to previous years. This is indicative of how many more houses got these systems installed during the period 2022–2023, coupled with the additional exposure to theft, inclement weather, and power surges.

These systems must be properly installed to avoid additional headaches further down the line.

"If things aren't done right, issues such as poor workmanship and faulty installations can lead to bigger problems," warns Britz. "Insurers are within their rights to decline claims under these circumstances."

Solar panels are one of the most popular solutions, but they also present unique challenges. "The wiring involved increases the potential for fires, and improper installation leaves them vulnerable to severe weather, such as hailstorms," warns Britz. "Moreover, countless homeowners fall victim to subpar installers, leading to dangerously inadequate workmanship in their solar systems."

Solar installations often involve lithium-ion batteries, which are particularly difficult to extinguish when they catch fire, requiring a specialised fire extinguisher to put out the flames.

Getting the right insurance coverage is as important as getting the installation right. That's why specific policies exist to address the unique risks of alternative energy and water systems.

"When adding something like solar, you want to ensure it's properly insured. Having the right coverage can save you from unnecessary expenses," says Britz.

So, what should homeowners and businesses be thinking about when adding these systems?

For starters, ensure the installation is up to code and has a Certificate of Compliance (COC). Surge protection is another must to keep systems from getting damaged during a power surge. And if you're installing solar panels, don't forget to get an engineer to check if your roof can support the extra weight – nobody wants their roof collapsing because it wasn't designed to hold solar panels.

Similarly, if you are installing a water backup system, Britz advises getting an engineer involved to ensure the plinth and tanks can withstand the elements and weight you intend putting on them.

Water shortages are also more than a simple household inconvenience. They expose businesses to the malfunction of already installed risk mitigations. "If there is no water, fire sprinkler systems can't do their job. Without them, a fire could result in total loss."

Britz advises considering alternative firefighting measures, especially if you are depending on water mitigation system that may not be functional at the most crucial moment. "It's wise to safeguard your property with a range of effective fire mitigation systems, especially when water is in short supply."

By anticipating water and power challenges, Britz believes businesses and households alike can safeguard their properties and finances against ongoing infrastructure issues.

"From compliance with regulations to securing the right coverage, it's all about planning. While Johannesburg deals with its infrastructure challenges, those who prepare now will be best equipped to weather the storm," he concludes.

> **When adding something like solar, you want to ensure it's properly insured. Having the right coverage can save you from unnecessary expenses.**
>
> **– Rudolf Britz**



# South Africa's solar boom at risk

The hidden dangers of poor-quality solar cables are a threat to the safety and sustainability of the sector, says Tertius Ness, chief operating officer (COO) of South Ocean Electric Wire (SOEW).

South Africa's solar energy sector is witnessing unprecedented growth, with the South African Photovoltaic Industry Association (SAPVIA) reporting over 6,200 MW of rooftop solar installed by early 2025, a 15% increase over the previous year.

This surge reflects the nation's commitment to a sustainable energy future, but it also exposes a critical vulnerability: the widespread use of poor-quality solar cables. Reports indicate that one in six fires attended by South African firefighters is linked to substandard solar installations, often due to faulty wiring or incompatible components.

High-profile incidents, such as the 2023 fire at a communications company's Cape Town headquarters, suspected to be caused by solar panel wiring, and a 2024 warehouse explosion in Durban, where arcing from substandard solar cables ignited flammable materials, have resulted in millions of rands in damages. These events underscore the severe risks of electrical faults, overheating, short circuits and explosions, which can lead to property damage, injuries and even fatalities, threatening both public safety and the credibility of solar energy adoption.

The rapid expansion of solar installations has led to an influx of cheap, substandard cables, many of which are imported and fail to meet international standards like BS EN 50618 and IEC 62930, the latter adopted by the South African Bureau of Standards (SABS) as SANS IEC 62930. These standards are designed to ensure that solar cables can withstand the harsh African climate, characterised by extreme temperatures, ultraviolet (UV) radiation and humidity.

However, irresponsible manufacturers often cut corners, using inferior materials that degrade quickly under environmental stress. Such cables are prone to insulation breakdown, which can lead to arcing, overheating and fire hazards. The 2024 Durban explosion, for instance, was traced back to a substandard cable that failed to handle the electrical load, resulting in a catastrophic failure that ignited nearby materials. Beyond safety, these cables reduce the efficiency of photovoltaic (PV) systems, lowering energy output and compromising the financial viability of solar projects.

Solar cables are the lifeline of PV systems, transmitting power from panels to inverters and beyond. Their performance hinges on rigorous manufacturing standards and testing. Key tests outlined in international standards include thermal endurance to assess heat resistance, UV and weathering tests to ensure durability against environmental factors and ozone resistance to prevent insulation degradation.

Other tests include damp-heat testing to evaluate performance in humid conditions, dynamic penetration tests to measure mechanical resilience, voltage tests to confirm insulation integrity, and hot-set tests to verify the degree of cross-linking for thermal and mechanical stability.

Cables that bypass these tests, often sold as "solar cables" but made with standard PVC insulation, lack the necessary durability, with lifespans far shorter than the 15 years expected of high-quality solar cables.

This not only jeopardises safety but also undermines the long-term reliability of solar installations, potentially deterring future investment in renewable energy.

The economic implications are equally concerning. Substandard cables lead to decreased conversion efficiency, reducing a plant's ability to generate planned production outputs. For large-scale projects, this can translate into significant financial losses, while for residential users, it means higher electricity costs due to system inefficiencies.

Moreover, the cost of replacing failed cables and repairing damage from fires or electrical faults far outweighs the initial savings of opting for cheaper products. In a price-sensitive market like South Africa, the temptation to choose lower-cost options is understandable, but the adage 'you get what you pay for' rings true. Cables significantly below market average prices are often made with substandard materials, unable to withstand the mechanical and environmental stresses of solar applications.

To mitigate these risks, buyers must prioritise cables that adhere to local and international standards, ensuring they have undergone comprehensive testing for safety and performance. Look for manufacturers with a proven track record of quality and compliance, offering transparency about their testing regimes and material specifications.

High-conductivity tinned copper conductors and cross-linked polyolefin (XLPO) insulation are hallmarks of durable solar cables, capable of withstanding the African climate. Additionally, opting for locally manufactured products can support South Africa's economy, create jobs, and reduce reliance on imports, many of which fail to meet regulatory requirements. The SABS's adoption of SANS IEC 62930 is a step toward stricter oversight, but until type 5 certification is available, due diligence falls on consumers and installers to verify compliance.

**Enquiries: https://soew.co.za/**

# Lovato Electric's DMG Series from ElectroMechanica: tackling South Africa's electricity cost challenge

South African businesses face a critical operational challenge as Eskom tariffs surge by over 18% year-on-year. This unprecedented increase has made energy management a top priority across industries. ElectroMechanica addresses this challenge by offering Lovato Electric's DMG Series Digital Power Analysers – comprehensive tools designed to provide the visibility and control needed to manage escalating energy expenses.

**The critical need for advanced energy monitoring**

Without accurate energy consumption data, organisations operate blindly, wasting resources and causing uncontrolled expenditures. The DMG Series offers the detailed insights needed for informed decision-making in power-intensive environments. These analysers are particularly valuable for sectors with significant energy demands, including manufacturing, cold storage, commercial buildings, and telecommunications.

**Technical capabilities**

The DMG Series features a vibrant, intuitive 4.3" colour LCD interface that simultaneously displays multiple electrical parameters. These instruments track critical metrics, including voltage variations, power factor measurements, harmonic distortion levels, and real-time consumption data.

These capabilities enable technical teams to establish baseline consumption patterns, identify anomalies, and implement targeted efficiency interventions rather than relying on generalised approaches to energy reduction.

**Enhanced savings through power factor correction**

While measurement is essential, the complementary DCRG Series Automatic Power Factor Controllers address another critical aspect of energy management. Power factor – which measures how effectively electrical power is being used – directly impacts billing and system efficiency. Poor power factor results in higher electricity costs despite no increase in productive energy consumption.

The DCRG Series uses capacitor bank technology to automatically optimise power factor by adjusting to changing load conditions. This technology reduces reactive power charges while extending equipment lifespan by decreasing electrical stress on distribution systems.

For comprehensive implementations, ElectroMechanica also offers fully integrated power factor correction panels incorporating DCRG controllers with appropriately sized capacitor banks, providing turnkey solutions that simplify installation without compromising technical performance.

**Technical features**

The DMG Series power analysers incorporate several advanced capabilities:

- Real-time monitoring: Track voltage, power factor, harmonics, and energy consumption parameters instantly
- NFC-enabled setup: Configure and replicate settings via smartphone, even without system power
- Modular expansion: Support for up to three additional communication, digital input, or output modules
- Multi-utility tracking: Capability to monitor gas, water, pressure, and temperature alongside electricity
- Multi-circuit capability: Support for up to 33 three-phase or 99 single-phase loads through a single monitoring point

The DCRG Series power factor controllers feature:

- **Dynamic capacitor bank adjustment:** Automatically maintains target power factor values
- **Rapid deployment:** NFC-based setup for quick configuration across installation points
- **Flexible integration:** Compatible with external current transformers and various capacitor stages
- **Intelligent algorithms:** Incorporates auto-tuning and load-balancing functionality
- **System protection:** Reduces grid stress and stabilises voltage across the electrical system

**Demonstrated local performance**

South African businesses implementing these Lovato Electric solutions report measurable reductions in electricity costs, typically within several billing cycles. These documented results demonstrate the effectiveness of comprehensive energy monitoring and power factor correction in addressing the challenge of escalating electricity tariffs.

As electricity prices continue their upward trajectory, implementing the DMG and DCRG series represents a strategic response to this ongoing challenge. These Lovato Electric solutions, available exclusively through ElectroMechanica, provide businesses with both the visibility and control mechanisms required to manage energy consumption effectively while supporting sustainability objectives.

"Don't wait for your next inflated bill – start tracking your energy, optimising your power factor, and unlocking immediate savings." – ElectroMechanica.

**Enquiries: www.em.co.za**



# Solar savings not adding up? Here's why

Many businesses investing in solar energy assume that once their system is installed, savings and efficiency will follow automatically. But what happens when a solar installation isn't performing as expected?

Underperformance is a serious risk that can quietly drain profitability, increase operational costs, and even disrupt business continuity. If a solar system isn't generating the power expected, the user could be paying more for electricity than anticipated, failing to meet sustainability targets, or even breaching financial agreements linked to energy savings.

The reality is that many businesses experience a shortfall in solar performance due to poor installation, inadequate maintenance, and a lack of proper monitoring. Without a clear strategy to manage these risks, a user's solar investment may not deliver the returns they expected.

**What causes solar underperformance?**

"Solar system performance can be affected by various factors, notably poor installation, inadequate system maintenance, a lack of quality data, and inadequate health and safety infrastructure," explains Richard Flamand, country lead of Candi Solar South Africa, a company specialising in end-to-end solar solutions for businesses.

For example, solar panels installed without the correct orientation and tilt, improper panel sizing, or the use of lower-efficiency panels will result in subpar performance. Dirty or damaged solar panels, as well as component failures like inefficient inverters, wiring issues, or defective panels, will also reduce efficiency and decrease energy output.

A lack of proper maintenance and expertise can result in declining performance over time, while inaccurate data analytics make it difficult to identify issues before they escalate, and could even lead to non-compliance with industry regulations, legal penalties or shutdowns.

"What we're seeing is that businesses often don't have a clear strategy for managing these challenges, which directly impacts the bottom line," notes Flamand. "Most businesses don't account for performance issues in their initial financial planning, creating unexpected gaps in projected savings. Even when performance issues are identified, many organisations lack the expertise to address them effectively."

**How businesses can safeguard solar investments**

Fortunately, businesses now have a way to take control and safeguard their solar investments.

In response to industry-wide challenges, Candi Solar has introduced an industry-first solution – Solar ProtectPlus – to protect solar investments. It combines performance insurance with expert asset management, ensuring solar systems deliver the savings and efficiency they were designed for. With this hassle-free approach, companies can protect their investment, avoid unexpected costs, and maximise their solar returns – without the burden of managing it themselves.

This is a result of three key features.

1. Guaranteed financial compensation is provided for any underperformance and every lost kilowatt-hour, ensuring businesses achieve their projected savings while avoiding additional costs.
2. Based on a simple annual fixed-cost model like the traditional operations and maintenance (O&M) fee but backed by Internet of Things (IoT) technology, AI and Swiss engineering expertise, this innovative solution takes care of all aspects of solar system maintenance and optimisation: repairs, preventative and corrective maintenance, warranty management and performance.
3. Candi Solar's performance-based revenue model ensures complete alignment with each client's best interests. The client pays a fixed rate per kWh, directly linked to the energy their solar system generates. When the system outperforms expectations, both Candi Solar and the client benefit, turning performance into shared success.

**A new standard in solar performance protection**

This innovative solution is set to reshape how businesses manage and protect their solar investments.

"Solar ProtectPlus transforms the energy landscape by providing complete protection against underperformance while ensuring optimal system efficiency. We are effectively removing all the uncertainty, complexity and risk from solar asset management. This means businesses can focus on their core operations while we ensure their solar investments deliver maximum value," concludes Flamand.

"We invite all solar asset owners who are not achieving the returns they expected from their solar investments or have experienced a noticeable drop in electricity production or a spike in electricity bills to contact us for a complimentary technical check-up."

**Enquiries: www.candi.solar**

# South Africa's evolving energy landscape

South Africa's energy landscape is poised for a significant transformation this year, says Andrew Middleton, CEO of GoSolr. From smart tech to industry shifts, here's his forecast for what's on the horizon.

Solar is getting smarter. Loadshedding alone was enough to convince users to go the solar route. Eskom's recent turn-around meant that we almost went a full year without loadshedding. It is evident that many solar PV systems have not been tweaked to reflect the changing market conditions, which means that savings are significantly less than they could be. As a result, smart energy management systems will take centre stage, helping users optimise consumption and reduce waste. This includes advanced energy monitors, AI-powered analytics, and low-cost ambient intelligence solutions. For the South African market, these technologies will empower homeowners and businesses to take control of their energy usage, even as tariffs increase.

The focus on regulatory changes will be prevalent in 2025. Eskom has tried to push a change in tariff design for years. We are supportive of a reform, but only if it leads to lower electricity prices for all users over time. We hope that NERSA will hear what stakeholders have been saying such that we can develop optimal tariffs together. The cost of doing it wrong can be significant.

We also look forward to seeing how municipalities implement the recently released net metering update from NERSA as it requires a transition to time-of-use tariffs and benefits for solar users exporting excess power to the grid. Despite the added complexity for customers to understand this tariff, such a transition can put the country on the right path for decarbonising its energy sector if done right.

And there will be more focus on the compliance side of installations. A national framework is being discussed, which will be beneficial in ensuring high quality installations in the whole country. A perhaps scarier aspect of compliance is the pressure and threats from a number of actors towards their customers with solar PV installs, as we have seen coming from Eskom in recent months. Compliance is paramount to ensure high quality installs and general safety, less so if the aim is to discourage customers from investing in a much-needed technology.

Regulatory changes will define how smoothly South Africa navigates its energy transition.

Eskom is not out of the woods yet. Loadshedding is less, but Eskom's financial situation is not sorted. Non-paying customers and municipalities, high investment needs as well as a serious debt burden means that Eskom needs to increase its tariff significantly going forward. This is bad news for the economy, yet alternative energy solutions are available to the public to reduce the negative consequences of these repeated increases. The good news is that these increases will lead to additional deployment of sustainable energy solutions such as solar PV systems of all sizes.

Will solar prices keep declining? 2024 saw a sharp decline in solar component prices, especially solar panels and batteries. This was the result of a number of factors, including overcapacity on the manufacturing side, falling raw material prices, overstocking and technological improvement. The balance between demand and supply should start normalising in 2025. We believe that prices for most key components will keep going down this year, yet not as quickly as in 2024. An underperforming currency as well as increasing install fees and maintenance can however threaten this continued cost reduction.

Will sustainability matter more in 2025? Getting solar was a no-brainer due to loadshedding. Users have then turned to savings to justify the transition to solar. Will sustainability be the next driver? An early sign that this is taking place is the recent news that a number of environmental groups are taking government to court for repeated violations of air quality standards. These violations are one of the reasons why loadshedding is no longer the priority concerns for most South Africans. The outcome of this case will be an important indication on how we can expect the energy space to evolve in the future.

South Africa's energy sector is at a turning point. As costs fall, technology evolves, and infrastructure and regulations adapt, 2025 presents a golden opportunity to revolutionise how we produce, manage, and consume energy. It is so exciting to be part of this journey; from making solar energy more accessible to helping businesses navigate the transition to renewables, we're here to drive South Africa's energy revolution.

**Enquiries: www.gosolr.co.za**

> **Solar is getting smarter. Loadshedding alone was enough to convince users to go the solar route. Eskom's recent turn-around meant that we almost went a full year without loadshedding.**
>
> **- GoSolr**

# BHA educator invited to judge at the Lux Futurum Awards

**BHA Lighting Design & Consulting's** Daniel Hammond has been invited to serve as an adjudicator for the 2025 Lux Futurum Awards, representing South Africa and the African continent on the international jury panel.

Hammond, who also works as an educator at BHA School of Lighting, will join renowned experts from across the globe to evaluate entries in this competition that recognises future-oriented concepts, products and projects advancing the boundaries of lighting design.

The Lux Futurum Awards, organised by Virtual Lighting Design Community (VLDC) in partnership with the Zhu Rong Team, provides a platform for 'East meets West' collaboration, offering visibility in both directions for innovative lighting solutions.

"It is a true honour to represent South Africa on the global stage and take up this adjudicator role among some of the lighting industry's leading designers and thought leaders," Hammond said. "The theme of 'East meets West' is a testament that light knows no boundaries. For this year's Lux Futurum Awards, I'm keen to evaluate and learn how innovations in light products, lighting design, and light science can create a global impact. It's an exciting opportunity to witness innovation that transcends borders and cultures."

Hammond will work alongside an esteemed international panel including Claudia Paz (Peru), Faraz Izhar (U.A.E), Jinkie de Jesus (Philippines), Ju Li (China), Lauren Dandridge (USA) and Karen Owens (UK).

Now in its second year, LuFu (as the awards are commonly known) honours ingenuity, originality, forward-thinking, and impactful contributions addressing important global issues in lighting design. The jury will evaluate submissions based on originality, creativity, technical merit and potential impact on the future of lighting design.

The organisers anticipate increased participation in this year's competition. Professionals from South Africa and across the African continent, including BHA students and lighting manufacturers, are encouraged to submit entries via the Lux Futurum Awards website.

Winners will receive a prestigious award, global visibility, and access to exclusive networking opportunities, joining a community that is shaping the future of lighting design and contributing to sustainability goals.

**Enquiries: www.luxfuturum.com**


# Synerji LED lighting solutions: illuminating the future with innovative technology

**By: Ilana Koegelenberg**

In the rapidly evolving landscape of commercial and residential lighting, Synerji Electrical has established itself as a leading provider of comprehensive LED lighting solutions. Its extensive range of LED strip lights, accessories, drivers, channels, and dimmers offers versatility, energy efficiency, and reliability for projects of all sizes.

### Cutting-edge COB LED strip lights

Synerji's Chip-on-Board (COB) LED strip light series represents the pinnacle of modern lighting technology. Available in cool white (4,000K), warm white (3,000K), and daylight (6,000K), these strips deliver consistent, seamless illumination without visible dots – making them ideal for accent lighting, architectural highlights, and décor applications.

Synerji offers both IP20-rated strips for indoor applications and IP65-rated variants for environments where moisture protection is essential. This flexibility allows designers and installers to specify the appropriate product for each project's unique requirements while maintaining consistent lighting quality.

### Smart connections: accessories for seamless installations

Complementing their strip light range, Synerji provides a comprehensive selection of accessories designed to ensure fast, secure, and flexible installations. Its connector range includes options for both rigid and flexible layouts, supporting everything from straight runs to complex corner joins.

The Synerji beet clip invisible LED light strip connector offers reliable, solder-free connections for single-colour LED strips. Made with durable polycarbonate casing and copper contact surfaces, it supports a rated current of 5.5 A and voltage of 0–36 V, providing both performance and longevity.

For more complex installations, the Synerji L connector delivers solder-free connections for 8 mm COB strip lights. With a transparent plastic body, copper contact surface, and UL-94-V2 fire resistance, it combines safety with aesthetic discretion.

Synerji's mounting clips with screws provide a fast and dependable solution for securing strip lights in place without relying on adhesives. Its LED strip connectors with wire make it effortless to bridge gaps between LED strip segments – perfect for navigating around corners or split-level installations.

For a professional finishing touch, Synerji offers transparent plastic end caps that protect the exposed ends of LED strips from dust and damage, ensuring both functionality and aesthetics in the completed installation.

### Power and control: drivers and dimmers

Powering the Synerji LED ecosystem is a range of specialised drivers engineered for performance and protection. The 36 W waterproof LED driver delivers stable power to LED strip lighting systems with an output of 24 V at 2.5 A and an energy efficiency of ≥88%. Its robust waterproof casing makes it suitable for both indoor and outdoor applications, while comprehensive protection features – including open circuit, short circuit, and temperature safeguards – ensure reliable operation.

For more demanding applications, Synerji offers the IP67 waterproof driver (100 W), which is essential for ensuring reliable operation in challenging environments. With its weatherproof construction and multiple protection features, it's an invaluable component for both residential and commercial LED lighting projects.

Control is equally important in modern lighting systems, and Synerji's dimmer range addresses this need.

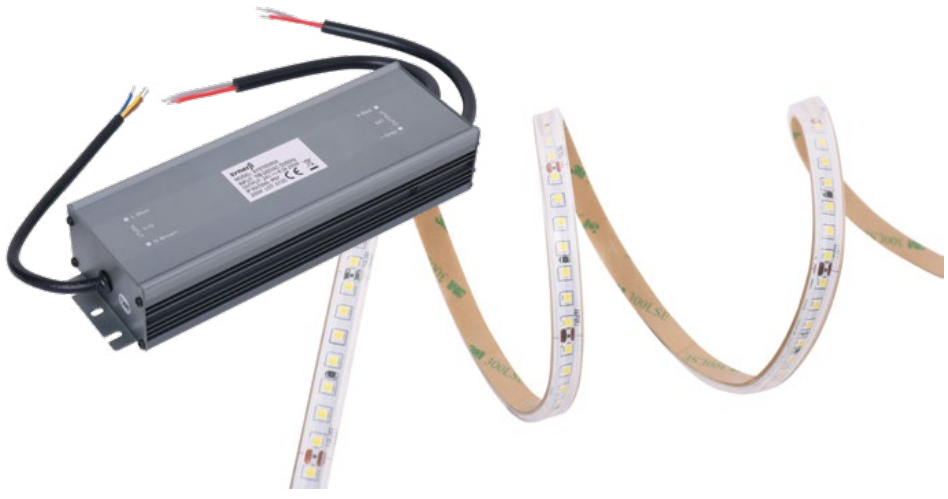
### Versatility across applications

Synerji LED lighting solutions are used in a wide range of applications. From warehouses, hotels, and offices to shops and showrooms, these lighting systems deliver the perfect balance of functionality and aesthetics. The high CRI of 90 ensures accurate colour representation, critical in retail and hospitality environments where product and space presentation matter.

With working temperature ranges of -25 °C to 45°C, these lighting solutions perform reliably in various environmental conditions. Their energy efficiency and 25,000-hour lifespan translate to reduced operational costs and maintenance requirements, making them an attractive investment for facility managers and property owners.

### Advanced technology for modern lighting needs

What sets Synerji apart is its attention to technical detail and quality. Their COB technology provides dot-free illumination superior to traditional LED strips, while copper bodies ensure optimal heat dissipation and durability. Cut lengths of just 0.05 m and maximum run lengths of 5 m offer flexibility in design and installation.

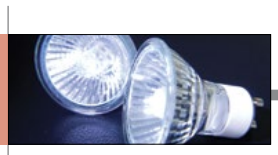


The entire system is designed with the installer in mind – from solderless connectors to comprehensive drivers with multiple protection features. This user-centric approach extends to their dimmers, which offer sophisticated functionality like holiday mode that simulates occupancy through random switching patterns.

Synerji's commitment to reliability is evident in its warranty offerings – five years for LED strips and two years for drivers and dimmers. This warranty, combined with their technical specifications and safety features, reflects a brand dedicated to quality and customer satisfaction in the professional lighting market.

For contractors, designers, and facility managers seeking energy-efficient, versatile, and reliable lighting solutions, Synerji's comprehensive ecosystem of LED strip lights, accessories, drivers, and control systems offers the perfect combination of performance, flexibility, and value.

**Enquiries: www.synerji.co.za**



# Day-night sensors that work hard so you don't have to

When working on residential builds, commercial upgrades, or even rural installations, the goal is always the same: deliver a system that works reliably, efficiently, and without any client callbacks. That's where day-night sensors come into play. And the Eurolux range, including the CO203 (25 A) and CO238 (10 A), stands out for its practical performance and durability.

**CO203: High-capacity control where it counts (25 Amp)**

The Eurolux CO203 is built for heavier-duty applications. With a 25 A load rating, it's ideal when for running multiple lights off a single sensor or working with higher wattage fittings such as:

- Commercial floodlights for warehouses, perimeter walls or loading bays;
- Estate boundary lighting where long runs and higher loads are common;
- Rural or agricultural installations where you may want to trigger several high-wattage lights from a single control point; or
- Large-scale driveway or entrance illumination, especially where aesthetics and automation are both key.

Its higher amperage ensures flexibility – a contactor won't be needed for most standard lighting circuits, cutting down on extra wiring and potential failure points.

**CO238: Compact and efficient for everyday use (10 Amp)**

Designed for smaller applications, this compact sensor delivers dependable operation without compromising on quality. The CO238 handles 10 A, making it perfect for:

- Residential perimeter lighting (garden spikes, bollards, porch fittings)
- Holiday homes or Airbnb properties, where low-maintenance automation is a bonus
- Feature lighting for landscaping that needs automatic on/off functionality; and
- Garage or entrance lights where energy-saving and convenience are a priority.

The CO238 offers a neat, low-profile solution with dependable photocell response and a clean finish – ideal when aesthetics still matter but the load is lighter.



**Practical perks across the board**

Both units offer:

- Automatic dusk-to-dawn switching (no need to adjust timers with the seasons);
- Energy savings – lights are never left running in daylight;
- Improved security – automated lighting deters intruders and improves visibility; and
- Peace of mind for homeowners and facility managers, especially when properties are left vacant for holidays or off-seasons.

Installation is straightforward: three-wire setup (Live In, Neutral, Switched Live Out), compatible with standard AC lighting circuits.

**Which sensor where? A quick guide**

| Application | Best choice |
|---|---|
| Large commercial lighting, security floods | CO203 (25 A) |
| Residential or garden lighting | CO238 (10 A) |
| Farm/stable lighting with multiple fittings | CO203 |
| Holiday home with minimal load | CO238 |

"Keep it smart. Keep it simple. Choose the Eurolux day-night sensor that works for your job," Eurolux said. "For full specs and trade support, contact your preferred Eurolux distributor."

**Enquiries: info@eurolux.co.za**

# Aurora Lighting Africa unveils the high-performance lighting solution

Aurora Lighting Africa has introduced the LEDline 24V RGBW LED Strip, a versatile lighting solution for residential, hospitality, retail, and commercial applications. Designed for efficiency and flexibility, this COB RGBW LED strip enhances environments with vibrant and dynamic illumination. Whether for luxury hotel mood lighting, retail displays, home ambience, or commercial installations, this innovative product delivers superior performance.

**Superior illumination and colour versatility**

With 896 LEDs per metre, the LEDline 24V RGBW LED Strip provides smooth, continuous illumination without visible spotting, ensuring a premium lighting effect. The RGBW technology enables a vast spectrum of colours, offering both vibrant hues and crisp white light in a single solution. This versatility allows businesses and homeowners to tailor their lighting to suit different moods and atmospheres.

**Flexible and easy-to-install design**

The strip's flexible design is a key advantage, with cut points every 63 mm for precise customisation. A 120° beam angle ensures uniform lighting distribution, minimising shadows and enhancing visual appeal. The durable 3M self-adhesive backing simplifies installation, allowing for quick and secure mounting on various surfaces. Its flexibility makes it ideal for curved surfaces and intricate designs, supporting both decorative and functional lighting needs.

**Scalable for large installations**

For larger installations, the LEDline 24V RGBW LED Strip is available in 30 m reels. To maintain brightness and performance, individual runs over 5 m should be connected in parallel, ensuring consistent power distribution and preventing voltage drop. This makes it an ideal choice for extensive lighting projects requiring uniformity and efficiency.

> **Durability is a hallmark of Aurora Lighting Africa's products, and the LEDline 24V RGBW LED Strip is built to last. With a three-year warranty, customers can trust in its reliability and long-term performance.**
>
> **- Aurora**

**Long-lasting performance and reliability**

Durability is a hallmark of Aurora Lighting Africa's products, and the LEDline 24V RGBW LED Strip is built to last. With a three-year warranty, customers can trust in its reliability and long-term performance. This makes it a valuable investment for homeowners, business owners, and lighting professionals seeking high-quality, energy-efficient solutions.

**Setting a new standard in LED lighting**

From residential ambience to retail displays, hospitality environments, and commercial spaces, the LEDline 24V RGBW LED Strip stands out as a leading choice for modern lighting. Aurora Lighting Africa continues to push the boundaries of innovation, reinforcing its position as a trusted industry leader. With exceptional flexibility, seamless illumination, and outstanding reliability, this LED strip is set to become a preferred solution for designers and lighting enthusiasts across Africa and beyond.

"At Aurora Lighting Africa, we are committed to delivering innovative and high-performance lighting solutions that enhance spaces with efficiency and style. The launch of our LEDline 24V RGBW LED Strip marks another milestone in our mission to provide versatile and reliable lighting for residential, commercial, hospitality, and retail applications. With its superior brightness, flexibility, and ease of installation, this product empowers designers and businesses to create dynamic, immersive environments like never before." – Scylagh Clunnie, managing director, Aurora Lighting Africa

**Enquiries: info@aurora-africa.com**



# Sustainable streetlighting solution for Ballito Village

**BEKA Schréder** has supplied a sustainable, energy-efficient streetlighting solution to the Ballito Village lifestyle estate in KwaZulu-Natal, South Africa.

As KwaZulu-Natal's North Coast continues to grow rapidly, new developments are emerging to meet the rising demand for housing. Located in the heart of the Ballito node, Ballito Village is a modern lifestyle estate designed for contemporary living. With the region's expansion, infrastructure improvements, such as streetlighting, are essential to ensure safe and efficient commuting for all road users.

BEKA Schréder has provided its LEDLUME 3 streetlighting solution mounted on their locally manufactured non-corrosive glass fibre reinforced polyester (GRP) poles. This robust solution provides both energy efficiency and ensures low maintenance for many years ahead with outstanding return of investment.

**Streetlighting solution**

The South African-designed and manufactured LEDLUME range offers optimised photometrical performance with a minimum total cost of ownership, enabling energy savings, improved lighting levels, and reduced maintenance costs. The great variety of high-performance optics optimises the photometric distribution for each specific application to achieve minimum energy consumption.

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

**GPR pole range**

The LEDLUME streetlights have been installed on South African-manufactured GRP poles, also known as the BEKAPOLE.

The BEKAPOLE has virtually unlimited applications. It can be manufactured to any requirement relating to the number and configuration of luminaires to be mounted, inclusive of any special colour. Furthermore, the low mass of the GRP poles saves handling, transport and erection costs during installation:

- Low handling costs: No extra equipment is needed to load or offload the poles.
- Low transport costs: Save on transport costs due to the poles' low weight and the higher stacking height on road freight.
- Low installation costs: No extra equipment is needed to erect the poles.

**About BEKA Schréder**

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

"We are very proud to be associated with Elliott Breytenbach & Gray in providing a successful streetlighting solution that enhances the safety of both road users and the local Ballito community in general," BEKA Schréder said.

**Enquiries: dbn@beka-schreder.co.za**

# How LED lighting is transforming South Africa

As South Africa grapples with rising energy costs, sustainability concerns, and the ongoing challenges of energy security, LED lighting is proving to be a game-changer. With significant advancements in technology, it reduces energy consumption and contributes to a greener, more sustainable future.

This article explores the impact of LED lighting on energy savings, its environmental benefits, and key trends shaping energy efficiency in South Africa.

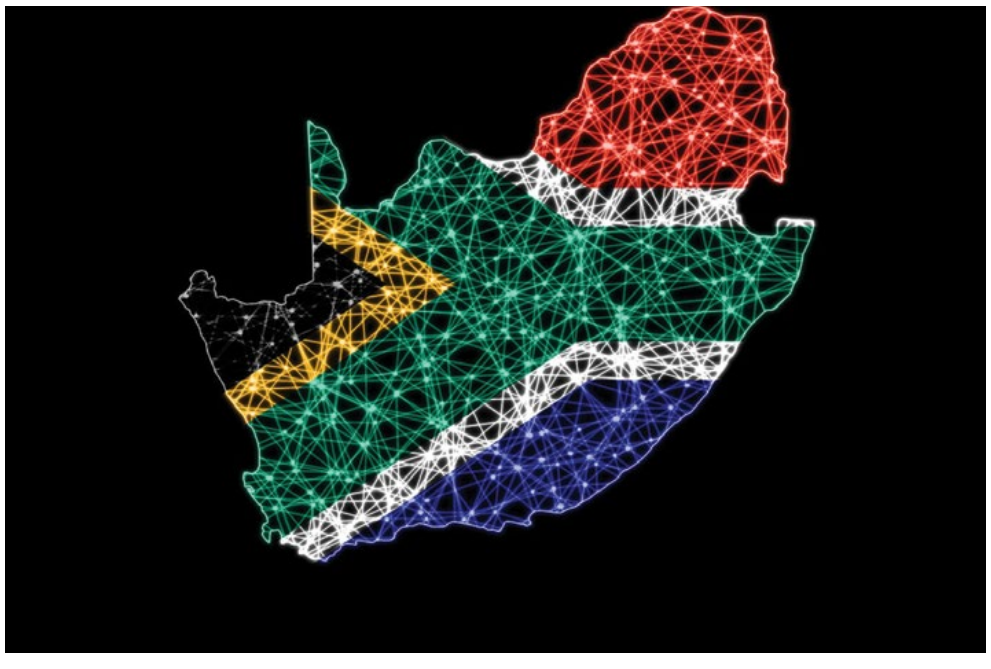
**Impact on energy consumption**

One of the most significant advantages of LED lighting is its remarkable energy efficiency. Compared to traditional incandescent and fluorescent bulbs, LEDs consume up to 80% less electricity, translating into substantial cost savings for businesses, municipalities, and homeowners. This efficiency is critical in a country where energy supply constraints continue to pose challenges for industries and households alike.

Beyond direct energy savings, LEDs have a significantly longer lifespan – often 25,000 to 50,000 hours compared to the 1,000-hour lifespan of incandescent bulbs. This extended lifespan reduces maintenance costs and the frequency of replacements, making LEDs a highly cost-effective solution in the long run.

**LED lighting plays a transformative role in South Africa's energy landscape, offering a powerful solution for reducing energy consumption, lowering carbon emissions, and enhancing sustainability.**

**- IESSA**



**Environmental impact**

Energy-efficient lighting plays a crucial role in reducing South Africa's carbon footprint. Since electricity generation in the country still relies heavily on coal-fired power plants, every kilowatt-hour saved through LED adoption helps reduce greenhouse gas emissions. Widespread adoption of LED lighting could cut $CO_2$ emissions by millions of tons annually, directly supporting South Africa's climate commitments.

Furthermore, LEDs do not contain harmful substances like mercury, which is present in compact fluorescent lamps (CFLs). This eliminates the risks associated with improper disposal and reduces hazardous waste in landfills. The lower energy demand of LEDs also alleviates strain on the national grid, reducing the risk of load shedding and improving overall energy resilience.

**Key local energy efficiency trends**

As the country transitions towards more sustainable energy solutions, several key trends are driving the adoption of energy-efficient LED lighting. These include:

- **Government incentives and policies:** The South African government has implemented various energy efficiency policies, including tax incentives for energy-saving initiatives and regulations that encourage the use of LEDs in commercial and industrial sectors. The ongoing push for sustainability is accelerating LED adoption across municipalities and businesses.
- **Smart lighting and IoT integration:** The rise of smart LED lighting systems is revolutionising energy efficiency. These systems integrate with IoT technology to enable automated dimming, occupancy sensing, and remote control, optimising energy usage and further reducing costs for businesses and municipalities.
- **Renewable energy integration:** Many South African businesses and households pair LED lighting with solar energy solutions, reducing reliance on the national grid. With solar power becoming more accessible, LED lighting plays a pivotal role in sustainable energy ecosystems.
- **LED retrofitting in public infrastructure:** Major cities are investing in LED street lighting projects, replacing inefficient sodium vapour and metal halide lamps with energy-saving LEDs. This shift is not only reducing municipal electricity costs but also enhancing public safety with better lighting quality.
- **Increased adoption in commercial and industrial sectors:** Businesses recognise the financial and environmental benefits of LED lighting, leading to widespread LED retrofitting in offices, retail spaces, and manufacturing facilities. Both cost savings and corporate sustainability goals drive the shift.

**Why turn to energy efficiency today**

LED lighting plays a transformative role in South Africa's energy landscape, offering a powerful solution for reducing energy consumption, lowering carbon emissions, and enhancing sustainability. With ongoing advancements in technology and supportive government policies, the future of LED lighting is brighter than ever. As professionals in the lighting industry, we have an opportunity to lead the charge in promoting and implementing these solutions to ensure a more energy-efficient and sustainable future for South Africa.

Now is the time to embrace the LED revolution and contribute to a brighter, more sustainable tomorrow.

**Enquiries: www.iessa.org.za**

# Illuminating the future: how Liam Abrahams is reshaping lighting design

A rising talent in South Africa's lighting design sector, Liam Abrahams combines technical expertise with a sustainable vision to deliver human-centric lighting solutions that are transforming commercial spaces across international markets.

**Background & early inspiration**

Liam Jason Abrahams (28) is a lighting designer at Elementary Technologies, specialising in energy-efficient and human-centric lighting solutions. Abrahams grew up in the Western Cape before relocating to the Northern Cape for his secondary education. He discovered his passion for engineering during his time at a technical school. Even at that early stage, he was particularly drawn to technical drawings and knew he wanted to pursue a career that would allow him to explore this interest further.

After completing his matriculation, Abrahams returned to Cape Town to undertake a two-year CAD course at CAD4ALL in Bellville.

**Professional development journey**

Abrahams' first industry experience came through an internship at Ackermans (Pepkor) as a store design intern, where he worked on layout planning and updating store designs. This role gave him valuable insight into spatial planning and user experience considerations.

His entry into the lighting design field came when he joined LED Lighting SA as a technical design draughtsman. Despite having limited prior focus on electrical design, this position pushed Abrahams beyond his comfort zone. During this time, he developed expertise across various aspects of lighting design, including layouts, simulations, and control systems.

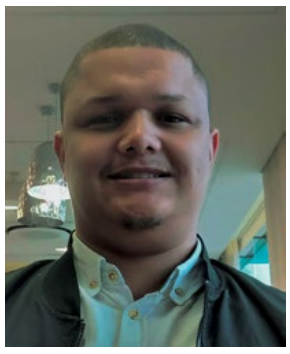
In 2021, Abrahams took up his current position at Elementary Technologies. While maintaining a similar title, the role itself evolved significantly. His focus shifted towards delivering comprehensive lighting solutions, prompting him to enrol in the Illumination Engineering programme at BHA to deepen his technical knowledge. At Elementary Technologies, Abrahams has worked on several smaller commercial projects and ongoing assignments for Flexistore, with the dual aim of creating designs that are both energy-efficient and aligned with human interaction needs.

**Notable achievements**

One of Abrahams's most significant professional accomplishments to date is the lighting and controls solution he developed for Flexistore's modular storage facilities. Involved from the early planning stages, he contributed to product selection, simulations, and refinement of the overall system. This solution has since been implemented across approximately ten stores, including three international locations in Norway, Finland, and Oslo. This project marked the first time Abrahams held full responsibility for a lighting system implemented at scale, representing a pivotal moment in his career development.

**Design philosophy**

What draws Abrahams to lighting design is primarily the problem-solving aspect. Though not considering himself particularly artistic, he has always been attracted to analytical challenges. As his understanding of lighting principles deepened – how it functions, affects people, and can be utilised responsibly – his passion for the field grew accordingly. Over time, his professional interest has increasingly gravitated towards sustainable and human-focused solutions. For newcomers to the field, Abrahams emphasises that comprehensive knowledge isn't necessary at the outset. What matters most is maintaining curiosity and openness to learning. He believes lighting design extends beyond software proficiency or product knowledge – it's fundamentally about how people experience their living and working spaces. Simply developing awareness of how lighting affects different environments can establish a strong foundation before delving into technical aspects.



**Future aspirations**

Looking to the future, Abrahams aspires to become a more recognised figure within South Africa's lighting design community. He aims to shift perceptions of lighting designers, highlighting their essential contribution to engineering and architectural projects. His professional goal centres on contributing to landmark projects across Africa, particularly those prioritising intelligent and sustainable infrastructure solutions. While not necessarily driven to establish a large design firm, Abrahams measures success by his ability to contribute meaningfully to progressive change within the industry.

**JUNE 2025 FEATURES**

- Energy measurement and supply
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- Lighting

**JULY 2025 FEATURES**

- Cables and cable accessories
- Standby and emergency power
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**Design:**
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**Publisher:**
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**Published monthly by:**
Crown Publications (Pty) Ltd
P O Box 140
Bedfordview, 2008
Tel: (011) 622-4770
Fax: (011) 615-6108
**e-mail: sparks@crown.co.za**
**Website: www.crown.co.za**

**Printed by:** Tandym Print

**The views expressed in this publication are not necessarily those of the editor or the publisher.**

abc Total 13 906 per month.

This publication is distributed to electrical contractors, wholesalers, distributors, OEMs, panel builders, Eskom, mining electricians and consulting engineers (electrical) as well as libraries, members of IESSA and public utilities.