

IS A LACK OF SKILLS HAMPERING RENEWABLES AS A VIABLE SOLUTION FOR ESKOM'S WOES?



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With Eskom executives warning that load shedding will be a constant reality for South Africans for the next 12 to 18 months, renewable energy and, in particular, solar power, have been mooted as the saviours of our failing national grid. However, a lack of the requisite skills and knowledge is hampering many photovoltaic (PV) projects in the country. "We have seen many companies entering the market recently, and it is quite clear that the relevant skills are lacking. Furthermore, the high demand for solar power means that the lack of skills in the industry will not be bridged quickly."

These are the words of Svilen Voychev, CEO of Valsa Trading. The company was established in 2009 and is focused on designing, manufacturing and supplying mounting system solutions, as well as a comprehensive range of solar energy products to the PV solar industry on the African continent.

Driven by new leading-edge technologies, its vision is to be a leader in the PV solar industry, sharing expert knowledge of innovative technologies and providing quality products to installers, resellers and end users. Valsa provides a comprehensive range of quality solar energy solutions and products including mounting system solutions, mounting components, solar panels, inverters, Li-ion batteries, ac and dc combiner boxes, cables, housing, power tools and other accessories.

"When we started the company, we focused on the manufacturing of the mounting structures," explains Voychev. "However, many clients asked if we could also do the installation on site." The company quickly

learned that our local conditions required more than simple 'copy and paste' solutions from overseas. "This approach allowed us to learn both the mechanical and electrical aspects of the industry, and it was a natural progression to move from the manufacturing and supply of the mounting structures into a total turnkey supplier as we had identified the gaps in the market and the needs in the industry." PV is a long-term solution with a heavy capex investment, but if clients do not do their homework, this will have an impact on their return on investment.

Voychev notes that the lack of skills in the industry is a big challenge. "We are seeing a few initiatives to promote education, but the only way to bridge this gap is constant work with the sector to provide training and support. As such, Valsa is extending its services to make installation teams more knowledgeable." He notes that the SAPVIA sponsored PV GreenCard is a good start to ensure responsible and sustainable growth of the industry. The PV GreenCard is an as built report for the solar PV system owner and a checklist for the installer, which qualified installers provide to their clients on the completion of a project. The PV GreenCard contains details of the installation such as, what sort of PV modules and PV inverters were used, as well as a checklist of all of the necessary installation steps that were completed.

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Cost-effective electrical termination solutions for the construction industry



Pratley has a range of cost-effective electrical solutions available to assist contractors in a recovering construction industry. "It is important that one does not compromise on quality in favour of cost, which is especially important when it comes to safety-critical electrical termination equipment such as cable glands and junction boxes," comments Pratley Marketing Director Eldon Kruger. "We have a range of cable glands and junction boxes that strike this balance well, ensuring both quality and cost-effectiveness on your next project."

When it comes to non-metallic cable glands, and unlike ordinary PVC cable glands, Tufflon compression glands from Pratley are made from a tough engineer-

ing plastic, which means that they are virtually unbreakable and do not suffer from frustrating 'thread jumping'.

They are SABS-approved and comply with SANS 60529. An IP68 seal protects these glands from dust ingress and ensures that they are completely waterproof for immersion up to 2 m. The glands can be adapted for use with flat twin and earth cables by simply replacing the standard compression bush supplied with a special adaptor bush. They are available in various sizes in black, grey, or white.

The Pratley Econo Box junction box is designed and manufactured specifically with the needs of the contractor in mind. Made of a tough, corrosion-resistant en-

gineering plastic, it is fitted with a raised dome lid that is held down by stainless steel screws to make the Econo Box tamper- and waterproof.

This SABS-approved junction box is manufactured complete with encapsulated internal earth to ensure earth continuity between all gland entries. Featuring four threaded entries, it is IP68 (2 m continuous) and IP66 rated, and can accommodate an N35 rail, spacers, and terminals.

The ZED® gland range for armoured and unarmoured cable is a low-cost option of nickel-plated brass cable glands for use with SWA and unarmoured cable. Supplied complete with nickel-plated locknuts, the range is SABS approved to SANS 1213. A range of accessories is available, and the unarmoured range of ZED glands is IP68 rated when fitted with a nipple gasket.

"All of these products form part of our extensive range of cable glands, junction boxes and related accessories for both normal and hazardous locations available from Pratley," concludes Kruger.

Enquiries: www.pratleyelectrical.com



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He also states that one of the biggest mistakes the industry is making, is sizing systems based only on the electrical perspective. "Very often, site conditions and site infrastructure are the key points and should be the starting point for any solar plant design. It is no use designing a system that cannot then be installed because of the site restrictions. Recently, a client would have needed to spend R2 million to reinforce a roof based on the initial proposal, however; we found a solution; thinner, lighter panels. This didn't require any downtime for the client to reinforce the roof."

Voychev's advice is to look at every project holistically. "You cannot just look at the electrical aspect, as that could create obstacles later in the project, meaning rising costs and unhappy clients. As installers, you look incompetent, the turnaround times are longer, and it takes the client longer to get off the grid."

Future demands

Voychev has been adamant since the formation of the company to manage local production to meet local requirements. "If you look at the infrastructure on the roofs of buildings in Africa compared to the rest of the world, some of the solutions available locally are made for different conditions," he says. While roofs in Europe are designed to cater for snow (with a solid roofing substructure), locally that is not the case. "We cater for local needs and local dynamics. Substructures differ so each solution needs to be dealt with on its own basis, which I believe gives us a competitive advantage," he explains.

Furthermore, the company is looking at growing in Africa and already has partners in Zimbabwe and Kenya. "They are going through the same learning patterns we have been through here in South Africa, so we are able to use our experience to assist them. Every African country is at a different level of maturity in terms of solar, so we identify solid partners by their ability to implement PV projects," says Voychev.

At the end of the day, the efficiency of the solar plant impacts on the return on investment. "I use the analogy of a goose that gives you a golden egg," he explains. "A solar plant will give you a golden egg every day, yet the size of this egg will be determined by what has been installed, how it has been installed and how it is performing, and often this isn't monitored, especially with the lack of skills in the industry. South Africa needs installers who are aware of this to help the industry grow, and ultimately provide clean, stable power to the citizens of South Africa."

Enquiries: www.valsa.co.za



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The **SAFEhouse Association** of South Africa is a non-profit, industry organisation committed to the fight against sub-standard, unsafe electrical products and services imported and manufactured in South Africa.

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You can make a change by reporting those products/brands/services that are not compliant.

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info@safehousesa.co.za
www.safehousesa.co.za



How to train an apprentice

Fresh out of school, many young people rush to university to get a degree. While that route suits some people, many find themselves left with a hefty student loan and no clue what to do with their new qualifications. More and more people are realising that a trade apprenticeship is a smart move. Not only can you earn while you learn, but you also have a clear career path, with endless progression opportunities once you're qualified.

Find the right fit

Hiring an apprentice is like adding another player to your sports team. You need to make sure they fit in terms of work ethic and personality traits – things like being hard-working and reliable go a long way.

Hiring an apprentice is a big undertaking and you need to make sure you're mentally up to the task, but it's a small investment for long-term gains. Having an apprentice on board with youthful energy and a hard-working attitude will benefit your business three-fold:

- You can train them from scratch, teaching them the way you expect them to work.
- They can assist with entry-level tasks, freeing up seniors to perform more profitable tasks.
- You help grow your industry by producing a high-qualified professional.

When hiring an apprentice, it's important to remember that everyone learns differently. Before starting, have a chat with your apprentice about how they learn best. The purpose of an apprenticeship is to learn on the job, but some people learn best by observing and others are more hands-on. Knowing what makes your apprentice tick is your best chance at making sure their training is well-supported.

Apprentice onboarding

Having an onboarding strategy will make all the difference in the long-term success of your apprentice. Otherwise, you'll likely leave them feeling confused, out of place, unmotivated or not knowing how to do their job properly – making the worksite less productive. Here's what makes a smooth onboarding process:

Make them feel welcome: Even before their first day, make apprentices feel welcome. Things as simple as sending them updates about the business are easy ways to make them feel welcome and increase productivity and motivation.

Set expectations: Make sure you start on the same page – it's the easiest way to prevent any miscommunication. Outline your expectations of work hours, job commitment and any other site matters, and allow apprentices to voice any of their own expectations.

Outline work goals: Keep in mind that your apprentice is new to the field and might feel a bit out of depth in the first few weeks. For an easier transition, encourage them to set some goals and ask how you can support them to achieve those goals.

Encourage feedback: It doesn't matter how long staff have been with you, feedback should always be a priority. If they feel like they have a voice, they'll feel a sense of value and belonging – which will increase motivation and productivity.

Check-in regularly: Arrange a weekly check-in with your apprentice, particularly in the first few months, to keep in the loop with how they're going. Things will run a lot more smoothly if you sort things as they happen – rather than leaving them to pile up. Plus, it'll make your business more profitable and productive if you keep an eye on their progress and offer advice when it's needed.

Your obligations



Taking on an apprentice is a big commitment – you need to be aware of your responsibilities, to avoid any hiccups.

- **Oversee the theory:**
- **Make their work a priority:** To get qualified, an apprentice needs to complete a range of paperwork to support their practical on-site learning. It's your job to assess this and sign the paperwork off when they've achieved it.
- **Educate and inform:** As the boss, you will need to teach apprentices everything they need to know to become qualified in your trade. When they complete their apprenticeship, they should be fully equipped as professionals in the field. You'll be responsible for ensuring they get there.
- **Ensure a safe working environment.**
- **As soon as they start, you need to bring your apprentices up to speed with workplace health and safety policies.**
- **Pay a fair wage.**
- **Monitor workload:** It's important to look after your apprentices and remember they're new to the job. Think carefully about overtime. There's almost always a written component to completing an apprenticeship that they need adequate time to complete.

Hire an apprentice, grow your business

There's no better way to grow your business than to get an apprentice on board. Not only is it good for the future of trade industries to pass on skills and knowledge, but an apprentice will also add new ideas and vibrancy to your business. The key is knowing how to train someone correctly, ensuring they get the best start so they feel empowered and your business thrives.

For many trade businesses there comes a point when there's more work on than one person, or your existing team, can handle. This is great news – it means your business and your skills are in demand. But not every client will be happy to wait months for your services. Hiring an apprentice in this situation could be a win-win situation for all.

Enquiries: www.tradifyhq.com

Best business smartphones 2022: the top handsets for work and productivity

If you're buying for yourself as a business smartphone user, you'll require a different set of features from your personal phone to be proactive and productive as a professional. Your business phone will need to charge quickly, offer you versatile business apps, and have hefty storage space as well as a high quality screen – and that's before you get into the details of the specific security software you'll need for your work phone. Don't forget the all-important aftersales and support, too.

Not all business smartphones tick all these boxes, which is why this list isn't just a copy of our guide to the best smartphones. No, the best business smartphones need a little bit more, and they need to keep providing it for a long time too, not just when you take it out the box for the first time.

It can't always be easy to tell how useful a handset and its features will be for you though, which is why we've drawn up this list of the best business and work phones you can buy right now.


All of these should be more than capable of running the latest business apps for Android as well as iOS apps for iPad/iPhone as applicable, everything from PDF apps to privacy services as well as connecting with your business phone service.

Best business smartphone at a glance as compiled by TechRadar:

- Nokia XR20
- Samsung Galaxy Note 20 Ultra
- iPhone 12

- Samsung Galaxy S20
- Motorola Defy
- Google Pixel 5
- iPhone SE (2020)
- OnePlus 8
- Samsung Galaxy S20 Ultra
- Planet Computers Astro Slide 5G













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Suppliers you can trust



Innovative suspension systems comes to SA

During the month of October, Cabstrut embarked on a nationwide journey to introduce a new suspension and bracing solution for building services; Zip-Clip.

Cabstrut offers the world of business and industry sophisticated solutions to Cable Reticulation & Management through a comprehensive range of dedicated power distribution and cable support systems. Cabstrut is a division of the Voltex Group, the leading electrical wholesaler with a network of branches nationwide. From design to installation Cabstrut can assist with any project from office reticulation of power and data to the distribution and management of critical services in mines,

power stations and commercial complexes.

After launches in Durban and Cape Town, the Cabstrut team and Steve Goldsworthy, the CEO and co-founder of Zip-Clip hosted the Johannesburg leg at the Bryanston Country Club. Theon Steyn, Cabstrut CEO, introduced the concept: "We have been growing over the last five years and we are always on the lookout for new products. Tonight, we want to show you a new product line which we have recently signed an agreement for which complements our current ranges of cable and reticulation management systems."

The product in question, Zip-Clip, is a high specification suspension systems for all your HVAC, Electrical,

Signage and Seismic requirements. Zip Clip is a range of innovative products designed for speed and ease of use. The clip is manufactured from a high-quality zinc alloy, while the oil impregnated sintered metal wedge is designed to offer the best locking solution. All the products are independently tested off site by NEL/TUV, Lloyds British, Apave, MTS and Satra and all clips are UL certified.

Talking of the agreement with Cabstrut, Goldsworthy noted that, "For me, this has been the best collaboration I have had in 18 years of business." This statement is corroborated by the fact that Zip-Clip are committing to an element of assembly and manufac-



Steve Goldsworthy, CEO and co-founder of Zip-Clip, Theon Steyn, Cabstrut CEO, Rob Macken, Group Technical and R&D Manager, Zip-Clip, and Dave Lovell, Cabstrut Operations Manager.



The team from Cabstrut at the Johannesburg leg of the Zip-Clip launch.

Cabstrut's new suspension innovation.

ZIP CLIP
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turing locally, ensuring that supply will never be an issue for local orders.

How it works

ZipClip is the strong, stylish, sensible, high-spec suspension solution. If you automatically think of using rigid threaded bars to solve your HVAC, electrical, mechanical and signage suspension needs, you may want to think again. The unique ZipClip system, based on a simple yet highly effective locking mechanism, is easier to handle, simpler to install and brings far more versatility. With its ingenious design, high-tensile galvanized wire rope is used in conjunction with a zinc alloy locking device, housing an oil-impregnated sintered metal wedge that engages first time.

As a result, ZipClip offers the surest, easiest locking solution available. And consultant engineers and architects who want more control over aesthetics and installation costs can turn to a swift, stylish solution without compromising on either strength or safety. Benefits for installers include a key-free release mechanism (no tools required), easy to transport and store (100 m of coil is equivalent to 30 x 3 m lengths of threaded rod) and no pre-site visits required. Furthermore, installation of the Zip-Clip system is approximately six times quicker than traditional methods.

Why use wire?

Early in the nineteenth century, visionary engineers discovered that, when steel is drawn into wires, its strength could increase – which means a flexible wrap of steel wires is stronger than a solid steel bar of the same diameter.

Based on this insight, they developed the forerunners of the modern wire-cable suspension bridge. Today, many of the world's most famous bridges routinely rely on this superior strength ratio. They can carry heavier load-decks for longer distances at greater heights than alternative designs. And, entailing fewer materials, even on the longest spans, they also bring lower construction costs.

Around the world, suspension bridges are recognised for their design ingenuity, slender lines and aesthetic appeal – a winning blend of engineering and aesthetics.

Made from high tensile 1960N/mm² galvanized wire rope, ZipClip can operate at normal safe working loads (SWL) between 10 kg and 500 kg.

If you are dealing with awkward shapes, unusual angles, demanding conditions, delicate materials, or rapid build-times, ZipClip offers innovative solutions

Goldsworthy is excited by the opportunities for Zip-Clip in South Africa, and the company received an overwhelmingly positive response to the concept at all three roadshows. "We see it as a great opportunity to bring innovation into South Africa," he concluded.

Enquiries: www.cabstrut.co.za



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A plan for power by those who hold the power – will it ever see the light?

In a surprise move Cyril Ramaphosa recently approved a renewable energy plan to combat South Africa's worsening energy crisis. Although a step in the right direction, Nato Oosthuizen, Partner and Renewable Energy Expert at BDO, and Christelle Grohman, Director of Advisory at BDO, share insight into the practicalities involved in implementing sustainable changes that could suggest the light at the end of the tunnel is still quite far off.

The President's recent announcement is a positive move for the country that has faced rolling blackouts for over 10 years and are only set to worsen in the future as infrastructure failures become critical. The red flag for many was the vagueness in the details as well as lack of definitive timelines for implementation of the plan. A further point of concern - the plan's heavy focus on improving performance of Eskom's existing fleet of power stations, cutting the red tape around purchasing maintenance equipment and recruiting skilled personnel. For many this is simply more lip service in an ongoing saga.

Is renewable energy the answer? Yes and no

So, if the country were to successfully implement a renewable energy plan, would we be well on our way to economic recovery with our eyes firmly focused on growth and development free from the shackles of Eskom's legacy? Unfortunately, it is just not that simple.

Yes, solar energy panels hold the limitless possibility of providing power, but renewable energy requires

more complex storage and management infrastructure. This is especially prudent in various business sectors. Grid-tied systems for example, store energy in the power grid and even if the bureaucracy ultimately gets to your premises to grid tie, there is still a process that needs to apply. People and businesses making investments in solar panelling must remember that the process must still be approved, authorised and linked up by the municipality itself. How quickly will this be facilitated? If historic service delivery is anything to go by then it could take years. Even if it does happen timeously, how will the management of these grids unfold because when a system like this is set up to provide power to some of our country's largest electricity users, systematic maintenance must follow suit.

Solar power could be a massive win for the country, but we can't forget that it doesn't begin and end with solar panels – and are we geared for what needs to happen beyond installation?

What about Eskom's pay before you use plan?

As home solar installations gather pace, the utility has proposed that households pay a much larger portion of their electricity bill in the form of fixed charges related to the supply of electricity that would see customers serviced directly by the utility in areas such as Sandton and Soweto paying hundreds of rands per month before using a single kilowatt-hour (kWh) of electricity. The massive breakdown in trust between the power utility and the power using public leaves this plan with many fatal flaws and should it be implemented it will

be another push for users to find any means to get off the grid – meaning added pressure on installation and management of renewable options. This proposal also doesn't address our country's primary power users – business as a whole – who now have the approval from government to self-generate instead of being forced to sustain outdated infrastructure.

Either way we are still left with the glaring issue of the long-term infrastructure management of renewable solutions.

There are options for sustainable solutions

Although there have been promises of "no more excuses", civil society is ready to take the power issue into their own hands. One solution that could nullify government's need to maintain renewable infrastructure and become a game-changer in South Africa would be the creation of 'mini-grids'. Essentially mini-grids are independent, decentralised electricity networks that can function separately from the national grid.

The idea of supplying electricity through mini-grids is not new; communities from the United States to Cambodia have long used this approach to bring local infrastructure into regional or national grids. The beauty is that mini-grids work best when feeding power into larger distribution networks. They are easier to assemble and deploy in hard-to-reach communities and deliver electricity more reliably. Decentralised solutions such as mini-grids are a cost-effective solution for delivering electricity. The challenge is to convince

government, policy-makers and investors of the value in going decentralised because it can be an expensive undertaking. The good news is that funding for mini grids powered by solar, hydroelectric, wind, or a mix of renewables is slowly increasing, but getting the right investment arrangement depends on getting the right policies and regulations in place first – a bottleneck that could hold us back.

There is a private sector ready and waiting to better package and meet the needs of electricity consumers, but the opportunity must be made available for the private sector to become an active part of the solution. Currently Eskom is still holding all the cards and South African's – both residential and business – not being invited to play so are likely to move along and begin their own game.

Enquiries: www.bda.com



SA's largest solar PV carport comes online in Pretoria



Marking a significant milestone in the development of South Africa's solar energy market, pioneering domestic energy firm SolarAfrica has successfully designed, constructed and commissioned the country's largest solar carport system for the Ford South Africa Silverton assembly plant, in Pretoria.

The landmark 13.5 MW solar project uses solar rays to produce 35% of the plant's electricity requirements, eliminating more than 20 000 tons of CO₂ a year. This will enable Ford to achieve its global sustainability target of using 100% carbon-free electricity across all its manufacturing operations by 2035.

The Ford project was inked under SolarAfrica's pioneering Power Purchase Agreement (PPA), which requires the automotive manufacturer only to pay for the electricity it uses. Additionally, the PPA did not require upfront capital expenditure but was co-funded by Commercial Energy SA (CESA). The CESA investment facility is based on a long-term joint venture between the Evolution II Fund and SolarAfrica.

Steven Faure, Partner at Inspired Evolution, the advisor to the Evolution II Fund, said, "We are excited to be involved in this landmark project to bring clean energy to Ford's Silverton operations. This project is a key milestone in the roll-out of best-in-class solar PV solutions for commercial and industrial consumers in South Africa. We will continue to work with SolarAfrica to deliver world-class solar solutions, contributing to a reduction of GHG and improving energy security across the country."

SolarAfrica CEO David McDonald says the 'mammoth' project, which required over 35 000 man-hours and created over 120 jobs among sub-contractors, represents a significant step-change in the progression of large-scale solar PV energy projects in South Africa.

"We applaud Ford South Africa for being industry leaders and committing to a sustainability project of this stature. Aside from the environmental and cost benefits, the Ford solar project has had a big impact on job creation in the Tshwane area, which is fully aligned with the City of Tshwane's focus to grow

the automotive industry as a key driver of employment," he says.

The bespoke, large-scale cantilever solar carport structure provides parking bays for more than 3 600 vehicles and comprises over 30 000 solar panels. The SolarAfrica-designed carport is an efficient way to deploy solar, as the solution protects parked vehicles from poor weather conditions while simultaneously producing cheaper, cleaner power.

The launch of the solar project comes as a report by economics consultancy Meridian Economics estimates that more than 15 000 MW of additional solar energy generation capacity, as well as almost 7 000 MW of wind energy, will be required to stabilise South Africa's energy system.

"We are glad to be contributing to the sustainability of this sector and assist Ford SA in bringing its vision of job creation to life, hopefully leading to further industry growth and indirect employment," McDonald adds.

About SolarAfrica

Founded in 2011, SolarAfrica is the first company in South Africa to provide a solar finance solution through Power Purchase Agreements, which enables business owners to reduce their monthly electricity costs by up to 40% and become more sustainable organisations, without having to pay any upfront capital.

As market leaders, they specialise in bringing together their financial and technical expertise to provide the best energy solutions. Ten years later, their diversified offering provides a holistic approach to solar solutions that are created to meet the long-term sustainable needs of their customers.

The company's integrated solutions are designed for commercial and industrial businesses in Southern Africa seeking a solution to power security, cost savings and carbon reduction.

In 2021, SolarAfrica was named the continent's leading solar energy firm, scooping the Africa Solar Industry Association's African Solar Company of the Year award.

Enquiries: www.solarafrica.com

Hitachi Energy awarded for best exhibition stand at 68th AMEU Convention in Durban



Hitachi Energy, advancing a sustainable energy future for all, received an award for Best Exhibition Stand at the 68th AMEU Convention. Hosted by eThekweni Metropolitan Municipality, the convention took place from 2 to 5 October at the Durban International Convention Centre under the theme of 'Just Energy Transition for South Africa'.

"This recognition is particularly significant as it is the first time we have exhibited as Hitachi Energy at the annual convention of the Association of Municipal Electricity Utilities (Southern Africa)," said Malvin Naicker, Managing Director, Hitachi Energy Sub-Saharan Africa.

"Our products create solutions for utilities based on innovative technology," said Stuart Michie, Head of Sales and Marketing for Southern Africa. Our technology solutions allow utility customers to manage their assets, improve operational effectiveness and boost network dependability by means of digitalization.

Hitachi Energy's technologies also give utility operators flexibility due to the altered energy mix brought on by the large-scale adoption of renewable energy. This is especially important given the shared goal of accelerating a carbon-neutral future, whereby electricity is the backbone of the entire energy system.

The focus of the exhibition stand was to display digital products supporting the transition of the energy system, such as advanced distribution management. The AMEU Convention provided an ideal opportunity for Hitachi Energy to network with new and existing customers.

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Connecting a bright future for South Africa's solar power industry

With commercial photovoltaic (PV) installations in South Africa booming in recent years, it appears that many more companies and individuals are looking at this option from a long-term perspective, knowing that it makes economic sense over time to supplement their electricity requirements through self-generation.

Against this background, Alexander and Poole (A and P), an electrical equipment supplier to the local and pan-African industry for over 40 years, has always focused on supplying connector solutions exclusively from Anderson Power Products (APP). APP designs and manufactures electrical interconnect solutions that are renowned for their durability, reliability and performance. A and P is the sole distributor for the Southern African region of APP electrical connector solutions, which are available for use in a number of industries, including solar power.

Growing opportunities in the local solar market

A and P Managing Director Andrew Poole clarifies: "The future of South Africa's solar power market has been looking brighter in recent years. The South African Photovoltaic Industry Association (SAPVIA) reports that the local PV market has ambitious targets to increase capacity installed from PV operations from 3 percent to 11 percent of total electricity supply by 2030. This represents significant opportunities for investors, manufacturers and operators.

In addition to the development of large-scale solar farms, there has been a satisfying increase recently in the number of commercial rooftop PV projects locally. We are seeing solar panels being installed in places like shopping malls, offices, office parks and car parks, as well as for domestic use."

Statistics have shown that most areas in South Africa average more than 2 500 hours of sunshine per year, while in contrast, the UK as a whole averages 1 493 hours of sun a year.

Juanita Rodrigues, A and P National Sales Manager, adds: "This shows quite clearly that South Africa's solar energy market offers sig-

nificant opportunity for development and growth. Our weather, hours of sunshine and vast tracts of open land all lend themselves to generating significant renewable energy via solar farms.

It is indeed encouraging to see an ongoing additional rise in commercial PV rooftop projects, as more and more companies and individuals exploring the possibilities of electricity self-generation."

Do you want to get off the grid?

Poole notes: "In addition, the ongoing vulnerability of the national energy utility, and the loadshedding that is required to keep the national grid in operation, only emphasises the importance of cultivating a mix of energy sources in order to make energy more available – and to offer back-up power. When asking yourself: 'Do I want to get off the grid?', it is important to ensure that you are using the best possible technology options. In this regard, another question to ask yourself is: 'Have I got the best accessories to complete my solar set-up?'"

Rodrigues explains that APP electrical connectors are used within the solar arena for applications such as power optimisers, battery packs, storage interface, signal phase inverter, loads, energy meters, monitoring platforms, and moving transmission from DC to AC power.

"The most widely-used product in the solar arena is the standard 50 Amp two pole connector, but APP offers a range of other connectors for this market as well. The APP SPEC Pak 5 Position Mid Power-Solar product is an ideal interconnect solution – designed for use in solar industrial applications with inverters, junction boxes or metered connections."

Features and benefits of the Spec Pak family include the following:

Ideal for off-grid mobile signage, lighting, fuel cell, micro-inverters and central inverters, solar, wind power, chargers, motors, machine tools, mobile climate control and industrial automation applications.



- Environmentally-sealed IP68.
- Meets weather ability rating of F1 under UL746.
- Meets UL 94 VO flammability rating.
- Customer configurable.
- Hundreds of power and mixed power and signal combinations.

"The beauty of the APP products that we supply at Alexander and Poole, is that we are able to offer superior alternative options to the standard MC4 connectors – which we stock specifically for the solar market," adds Rodrigues.

"APP solutions achieve the highest levels of durability, quality and reliability, yet are also cost-competitive. As South African businesses and individuals consider – and embrace – the possibilities of PV solar power, Alexander and Poole will continue to work closely with APP to identify future design opportunities where quality, reliability, and performance is at the very forefront," she concludes.

Enquiries: www.poole.ca.za

Managing consumption key to solving energy crunch

CBI :energy, a new player in the energy management space, today launched its first solution offering at Power & Electricity Africa. The flexible, low-cost, Cloud-connected Managed Smart Metering system is aimed at the commercial real estate, office and solar energy markets. The system enables operational and technical staff, as well as business managers, property owners and managing agents of multi-tenanted sites, to gather, analyse and act on real time electricity consumption data across a site, or to focus on groups or individual electrical loads.

Consisting of single and three-phase connected electricity meters communicating wirelessly with a managed Cloud infrastructure, the Managed Smart Metering system, developed and manufactured in South Africa by :energy, is designed for medium to large commercial implementation. The compact, billing-grade smart meters allow for full four-quadrant Class 1 (better than 1% accuracy) metering of both electricity generation and consumption in real time at Points of Supply, sub-DBs and individual and groups of loads. Data is generated at one-minute intervals for key metrics which include real and reactive power and energy, voltage, current and power factor. This telemetry for each device is then rated to give detailed current and historic information on the customer's Rands and cents costs for peak, off-peak and standard time of use tariffs.

"Electricity has become a massive and unsustainable cost of business, and we urgently need to change how we use it. Finding vast amounts of data on the generation, distribution and trade of energy is easy. But there is astonishingly little information on how electricity is consumed – by whom, for what, where, and how much. If we don't know more about how we use energy, we'll never make the behaviour changes needed for a carbon zero future," says Roger Hislop, Energy Management Systems Executive at CBI-electric: low voltage.

Installation is fast and easy; the "Fit & Form" compact energy meters can be deployed with minimal disruption to business operations and need no changes to be made to electrical or building infrastructure. The :energy Managed Smart Metering devices use proven Wi-Fi technology, communicating either over corporate wireless network, or aggregated over a single LTE wireless router. Most smart meters today must either be hard-wired to a data network or use 3G or LTE mobile phone technologies for connectivity which add considerable operating expense and do not function in building basements and other low-signal areas.



The Managed Smart Metering system has been designed to be simple to integrate with other software systems through the open API provided by :energy.

It simplifies energy management, simplifies cost management, and simplifies gathering of the detailed data that is needed to comply with new regulations coming into force for building energy management. Most notable of these is the ISO 50000 standard, and the Energy Performance Certificate (EPC) that will become a legal requirement for commercial buildings over 2 000 m² by the end of this year.

"There is an old saying in the electricity industry – the cheapest Watt to generate is the Watt you don't use. This new Managed Smart Metering system puts electricity consumers back in control of their spend," concludes Hislop.

The :energy Managed Smart Metering solution has a recommended price of R2078 for the single-phase connected meter, and R4440 for the three-phase, which includes three years of the managed service subscription.

About CBI :energy

CBI :energy is a division of CBI electric: low voltage, a South African designer, manufacturer and supplier of quality low voltage electrical distribution, protection, and control equipment, including circuit breakers, residential current devices, surge protection, wiring accessories, and metering products. Headquartered in Johannesburg, South Africa, the company is a subsidiary of JSE-listed industrial group Reunert, with international operations across Africa, Asia, Australia, Europe, and USA.

Enquiries: www.cbi.energy

How unified power management and process automation boost profitability and operational resilience

By Dwibin Thomas, Cluster Automation Leader at Schneider Electric

Energy-intensive industries, especially oil and gas and petrochemicals, have never been more under pressure to meet sustainability targets, boost uptime, maximise throughput and reduce total expenditures (TotEx) by lowering the end-to-end lifecycle costs of their assets.

One way owner/operators and engineering professionals can identify strategies to reach these goals is to ask two questions:

- Is there an overlooked source of value in our operations?
- Can we take advantage of currently available technology to unlock it?

Thanks to advances in connectivity and digital analytics technology, the answer to both questions is an unequivocal yes.

Until recently, industrial enterprises' power and process systems were designed and operated independently across a plant's lifecycle. However, evidence confirms that uniting these two domains and managing them holistically can offer dramatic resiliency and efficiency benefits for industrial operations.

Whether organisations integrate during a plant's design phase or unite existing power and process system management during a major infrastructure upgrade, the fusion of the two has real potential to accelerate business value and help build a long-term competitive advantage.

Traditionally, power management and process automation separation were primarily due to technical hurdles with separated engineering domains connected by hardwired signals and localised digital information.

Engineers are now realising how important it is to merge the two processes, benefiting from coordinated systems within an operational and maintenance framework.

There's ample evidence to suggest that companies require new data-driven insights to support better, faster decision-making to thrive in today's volatile economic environment.

They need to respond faster to critical conditions that threaten uptime and become more agile to make their operations more resilient, safe, and profitable, which is much easier to achieve with converged power and process systems.

Protecting today's critical production infrastructure means rethinking traditional methods. For example, original high-speed load management systems matured with the advent of super-fast networking and the use of the IEC61850 information models and signalling.

The reality is that for virtually every onsite power generation situation the power and process physical systems are already intrinsically connected electro-dynamically, so why not monitor and manage them as a unified system at a higher level of close loop, cascade loop and analytic behaviour?

Modern, digitised solutions offer the best of both worlds

Converged power and process solutions with predictive analytics, such as Schneider Electric's EcoStruxure Process and Power, are engineered to help boost profitability by:

- Improving operational efficiency and saving energy.
- Increasing electro-dynamic protection for more uptime.
- Enhancing asset reliability to prevent downtime

Converged digitised systems offer additional benefits, including faster commissioning, less cabling, simpler maintenance, and a reduced footprint. With the outstanding potential to improve process and energy efficiency while lowering risks to operational continuity, digitised process and power control solutions make good business sense in an unpredictable business environment.

Enquiries: www.se.com



Why do solar panels need to be inspected?

By Gerrit Barnard – COMTEST Fluke Product Manager

Recent observations of urban-domestic and SME offices, sporting row upon row of solar panels, clearly shows evidence of the increasing trend by these sectors, to switch from traditional sources of energy to alternative/clean energy – in this instance, solar energy.

Solar panels are made up of cells joined together in series, and relayed to a control box. And, of course, when connected in series, the panel is only as good as the weakest cell. If one of these cells fails, it affects the overall performance of the entire panel. The case study illustrated here is of a roof-top installation situated on the Old Mutual Building, in central Johannesburg, Gauteng.

Solar panel installations: other points of consideration Installation

Close attention should be paid to the installation of panels. If, as in the case illustrated in Image 1, the panels are located too close to the concrete roof surface, they are affected by radiated heat. This is evidenced by quite a few cells failing along the bottom of the panels. In this installation there is no more than 15cm clearance between the roof and the bottom edge of the panels. For this installation to be successful and give better performance, the panels would have to be raised, allowing for better ventilation and less heat build-up at the bottom. Fluke's IRR1-Sol Solar irradiance meter not only measures panel performance and temperature, but it is specifically engineered to perfectly align solar panels for optimum performance. It accurately measures the irradiance – the angle of the pan-

el vs angle of the sun.

Panel inspections

Ideal conditions for inspecting solar panels are clear, sunny skies for optimum readings. Faulty cells would be a lot warmer because overcast conditions do not produce maximum performance.

Access to panels

In order to walk and scan the panels, one needs access to the panels. The Fluke 401 or TiS60 imagers suit this application well, as long as the installations are spaced so that maintenance technicians are able to walk along the series and scan the panels individually. Manually tested, the Ti's pictures are saved with time and date, as well as tagged with voice memo recordings of where the panels are located. The photos can then be downloaded so that the technician knows exactly where to find the particular problem panel. One can even take the serial number of the panel, as well as 4 extra photos of the panel being worked on.

Walk access to solar panels is not always possible, this then calls for drone technology, that flies over the panels, and views them remotely. An example of this would be the Northern Cape's vast solar arrays.

Panel lifetime

Be aware that solar panels do degrade their output performance over time, and they definitely have a finite lifecycle, thus regular maintenance is absolutely necessary.

Other devices technicians use to test and

troubleshoot solar installations:

- Fluke 393FC Clamp meter/troubleshooting tool measures load and voltage levels.
- Fluke 1775 PQ Logger measures power inverter efficiency, power output and power quality of solar systems.
- Fluke BT520 measures and tests the batteries in solar applications, and identifies the weakest battery in the string, allowing owners to choose to replace only one particular battery, if needed.

Enquiries: +27 (0)10 595 1821.

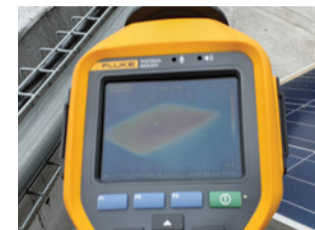
For product information, visit <https://bit.ly/3zyGzlm>



It is clear to see in this image that the corner cell in this panel has failed.



Roof-top panel installation, Old Mutual Building, in central Johannesburg, Gauteng. The initial inspection shows where the hot spots are. Using a Fluke TiS60+ thermal imager, the technician identifies and pinpoints faulty panels. The ideal thermal imager has a high resolution (minimum 320 x 240) and good thermal sensitivity, in order to detect and highlight subtle differences in the cells.



Comtest_Solar2: One block is heating up relative to the rest of the cells. This indicates a faulty panel, and that one of the cells that are connected in series has failed, dropping the performance of the panel. This panel needs to be replaced.



It can happen that 2 or more cells could fail at different points. A thermal imager is very handy to quickly identify and pinpoint those faulty cells in a solar panel. Bearing in mind that the strings are all connected in series and if this one has two cells that are faulty, overall performance is lost on the panel. The thermal imager's screen shows that one cell is running at 53°C relative to the high marker – the centre point is the general temperature of the panel – 29°C, shows a vast (23°C) differential in temperature. This panel has performance problems, and is not giving the full output as expected.

Comtest_Solar5: Another view where hot spots occur in different places. This image clearly illustrates the advantages of a thermal imager. Looking at the panels with the naked eye, one would not pick up any anomalies. But, with a good (to spec) imager, one can very clearly see the problems with this panel, involving multiple faults.

Turning on Earth Day with digital switchgear



Graham Abrahams Senior Vice President, Electrification Products Division at ABB South Africa.

ABB recognises that new solutions are needed to manage the pressures being placed on our environment. In acknowledgement of Earth Day on 22 April, the company is showcasing the benefits of digital switchgear. Switchgear is used to distribute electrical energy with electrical devices to control, protect, and isolate electrical equipment.

Growing out of the first Earth Day in 1970, Earthday.org is the world's largest recruiter to the environmental movement, working with more than 150 000 partners in over 192 countries to drive positive action for the planet.

"Our aim is to help make a safe, smart, and sustainable world possible with technologies that reduce energy consumption, eliminate emissions in industry, infrastructure, and transport, and improve quality of life," says Graham Abrahams, Senior Vice President, Electrification Products Division at ABB South Africa.

As an alternative to our traditional AIS or GIS with SF6, ABB's sustainable switchgear solutions use AirPlus™, a groundbreaking, climate-friendly gas mixture. Since its introduction, ABB's AirPlus™

solutions have been performing successfully in several customer installations.

The latest trend is digital switchgear, which combines proven technologies with digital components and software solutions to enhance safety and reduce installation cost, while significantly reducing space needed and optimising operational cost while constantly detecting condition and maintenance needs.

By using multiple sensors to measure tem-

perature and humidity, and by monitoring utilisation and operating cycles of electrical devices, digital switchgear can monitor its own health and indicate when conditions change. Hence it can predict potential failures before they occur or alert when maintenance is needed, avoiding costly or unnecessary downtime.

In addition, ABB Ability™ condition monitoring solutions collect, analyse, and visualise various data to provide valuable process insights.

Most of ABB's low-voltage and medium-volt-

age switchgear is available in digital versions.

Every Earth Day can drive a year of energy, enthusiasm, and commitment to create a new plan of action for our planet. ABB not only acknowledges that the world needs transformational change, especially in terms of power generation and energy mix, but that technological advances in specific areas such as switchgear play a key role.

Enquiries: www.abb.com

30% less time for installation and settings.
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The breaking new ground European quality SACE Tmax XT molded case circuit-breakers offer a unique customer experience sharing the same features and logics with the Emax 2 range for maximum circuit protection. With seven different sizes and a current rating from 160A climbing to 1600A, there's a solution for every purpose. Discover how SACE Tmax XT maximizes data and connectivity, ease of use and installation, performance and protection, safety and reliability; visit go.abb/xt

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Bosch Diesel Service
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Matelec
Megger
NewElec
Nordland Lighting
Phoenix Contact
Power Process Systems
Shuttle Lighting Control Systems
Silicon Engineering
Sollatek Electronics
Spazio Lighting
Superlume
Three-D Agencies

DISTRIBUTORS

ACDC Dynamics
Altron Arrow
ARB Electrical Wholesalers
Arrow Altech Distribution
Atlas Group
Aurora Lighting
Bellco
Bosch Diesel Service
CED – Consolidated Electrical Distributor
Citilec
Clearline Protection Systems
Comtest Distribution
Cummins SA
Denver Technical Products
Electrahertz
Electromechanica
Eurolux
ExSolar Solar Solutions
Fusecomp
Genlux Lighting
Krelum Lighting
Magnet Electrical Supplies
Magnitech
Major Tech
Mantech Electronics
Matelec
MCE Electric
Power Process Systems
Radiant Lighting
Riken Electric
Regal Distributors
Silicon Engineering
Sinetech
Superlume
Swan Electric
Three-D Agencies
Vert Energy
Voltex
Voltex Lighting
Vossloh-Schwabe
Waco Industries
Zest WEG

CONTACTS

ACDC Dynamics
Elmari Erasmus/Dirk Klynsmith
ACTOM Protection and Control
Faisal Hoosen

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ARB Electrical Wholesalers
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Arrow Altech Distribution
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Atlas Group
Annie Storar or Imran Gaffoor
Aurora Lighting
Olivia Tait
BEKA Schröder
Grant Combrink
Bellco
Shiraj Wentzel
Bosch Diesel Service
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CED – Consolidated Electrical Distributor
Richard Egenrieder
Citilec
Jeff Forman
Clearline Protection Systems
Tanya/Rakesh
Comtest Distribution
Sales Team
Crabtree South Africa
Brendan
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Denver Technical Products
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Electrahertz
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Electromechanica
Debbie Venter
Eurolux
Andrew Wex
ExSolar Solar Solutions
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Fusecomp
Charmaine
Genlux Lighting
Glen Hill
HellermannTyton
Sales
Krelum Lighting
Krisen
LEDvance
James Clifford
Legrand SA
Johan Bosch
Magnitech
Amar Singh
Major Tech
Werner Grobbelaar
Mantech Electronics
Manny Moutinho
Matelec
Yann Leclzio
MCE Electric
Sales
Megger
Sales
NewElec
Luc Dutrieux
Nordland Lighting
Johann Lamprecht
Phoenix Contact
Carl Coetzer
Power Process Systems
Michael du Toit
Radiant Lighting
Alfred Weldon
Riken Electric
Franza van den Heever
Shuttle Lighting Control Systems
Tracey Steyn
Silicon Engineering
Chris Hanson
Sinetech
Chris Rodgers
Sollatek Electronics
Nick Allen
Spazio Lighting
Sales
Stone-Talcor
Mark Talbot

CONTACTS

Superlume
Willie Garbers
Swan Electric
Sales
Switchman Products
Josh Berman
Three-D Agencies
Mark Jenkins
Vert Energy
Grant Robertson
Voltex
Hugh Ward
Voltex Lighting
Wendy Higgins
Vossloh-Schwabe
Barry Harrison
Waco Industries
Sales
Zest WEG
Generator Sets Sales

GENSETS AND ACCESSORIES

ACDC Dynamics
Wide variety of domestic, commercial and industrial generators and accessories
ARB Electrical Wholesalers
Full range of gensets and accessories
Atlas Group
Gensets and accessories available according to customer specifications
Bellco
Gensets and accessories available according to customer specifications
Bosch Diesel Service
Gensets and accessories
CED – Consolidated Electrical Distributor
ABB and TosunLux
Citilec
Gensets and accessories
Cummins SA
Full range of gensets and accessories
Electrahertz
Full range of gensets and accessories
Electromechanica
Full range of gensets and accessories
Fusecomp
Fuses and fuse accessories/solar equipment
HellermannTyton
Accessories for the installation and maintenance of gensets; Large selection of cable ties including UV and high temperature, as well as spiral binding, Ratchet P Clamps, lugs and pre-insulated terminals, heat shrink
Riken Electric
Full range of gensets and accessories
Silicon Engineering
External battery chargers
Sinetech
Inverters – single-phase, three-phase, grid tie, off grid and hybrid
Swan Electric
Gensets and accessories
Switchman Products
Changeover panels, controllers and enclosures
Vert Energy
Full range of gensets and accessories
Voltex
Gensets and accessories available according to customer specifications
Zest WEG
Full range of diesel generators and accessories, 10k VA-3350k VA. Standard or custom built - prime or standby, single sets or synchronised power plants

EMERGENCY LIGHTING

ACDC Dynamics
Extensive range of emergency lighting in various brands and options including Gewis; emergency lighting for buildings, mining and automotive applications
ARB Electrical Wholesalers
Full range of emergency lighting
Atlas Group
Distributors of Voltex Lighting emergency exit and other signs; emergency control gear for fluorescent lights
Aurora Lighting
Extensive range of emergency lighting
BEKA Schröder
Full range of emergency lighting
Bellco
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Citilec
Full range of emergency lighting
Clearline Protection Systems
Range of emergency lighting

EMERGENCY LIGHTING

Denver Technical Products
High power mains fail safety lighting; trailer mounted floodlighting, up to 4 x 1 000 W; high pressure sodium lamps powered by onboard diesel generator, handheld explosion-proof intrinsically safe torches
Electrahertz
Full range of emergency lighting
Eurolux
LED emergency light; rechargeable portable emergency lights
Genlux Lighting
Full range of emergency lighting
Krelum Lighting
LED T lamp 15W E27 with battery backup
Legrand SA
Full range of self-contained emergency lighting
Magnitech
Emergency lighting; battery backup and battery cycling units; bulkheads
Major Tech
Full range of emergency lighting
Matelec
Retro-fit bulkhead battery back-up
MCE Electric
O-Lite solar LED, O-Lite solar LED emergency charge lights/LED emergency light
Nordland Lighting
Full range of emergency lighting
Radiant Lighting
Floodlight LED aluminium 12 W battery back-up; rechargeable camping emergency lanterns LED battery 1.6 and 2.4; motion sensor LED plus flashlight emergency lights 40/35 and 35/18 lumen; exit light 230 V LED with backup; LED lamps A60 5 W E27 and B22 4 000 K with backup
Sinetech
Solar street lighting with five year warranty
Spazio Lighting
Full range of emergency lighting
Superlume
A variety of emergency lighting
Voltex
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Voltex Lighting
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Vossloh-Schwabe
Full range of emergency lighting
Waco Industries
Rechargeable desk lamps; Rechargeable 24 LED Spot Lite

BATTERIES FOR EMERGENCY APPLICATIONS

ACDC Dynamics
Full range of batteries and backup solutions such as UPS systems, invertors, etc
Altron Arrow
Full range of batteries for emergency applications
ARB Electrical Wholesalers
Full range of batteries for emergency applications
Arrow Altech Distribution
Lithium iron phosphate battery management solution
Atlas Group
Distributors of Solid State Power invertors in various sizes
Aurora Lighting
Extensive range of battery backups for LED light fittings
Bellco
Distributors of invertors in various sizes
Citilec
Full range of batteries for emergency applications
Electrahertz
Full range of batteries for emergency applications
Electromechanica
Full range of batteries for emergency applications
Fusecomp
Lead acid batteries 12 V 100 Ah
Mantech Electronics
Full range of sealed lead acid (SLA) batteries in regular, deep cycle and gel types
MCE Electric
Solar Pal PV lead acid, gel and lithium batteries; O-Lite LED emergency battery back-up kit
Radiant Lighting
LED panel emergency backup: metal case, 3 m cable, 6 A plug; spare emergency backup for LED; backup 12 V 50 W remote/maintained; remote backup for fluorescent 6 – 65 W magnetic 1H00 five cell
Regal Distributors
Batteries for emergency applications
Riken Electric
Full range of batteries for emergency applications
Silicon Engineering
BAE: Belin stationary, solar, UPS lead acid batteries; Everexceed: stationary, valve regulated and re-combination nickel cadmium cells





BATTERIES FOR EMERGENCY APPLICATIONS

Sinetech
AGM gel/lead acid hybrid solar batteries; nano carbon batteries; lithium ion batteries

Stone-Stamcor
Yuasa sealed lead acid batteries

Swan Electric
Full range of batteries for emergency applications

Voltex
Distributors of inverters in various sizes

Waco Industries
Battery backup for light fittings

PUMPS FOR EMERGENCY APPLICATIONS

ACDC Dynamics
Variety of pumps for most applications including solar pumping systems

Bosch Diesel Service
Diesel injection system

MCE Electric
Solae Pal PV solar borehole, centrifugal, surface and pool pumps

UPS

ACDC Dynamics
Comprehensive range of UPSs

ARB Electrical Wholesalers
Full range of UPSs

Atlas Group
Distributors of Solid State Power UPSs in various kVA ratings

Bellco
Distributors of UPSs in various kVA ratings

Citilec
Full range of UPSs

Electrahertz
Full range of UPSs

Eurolux
UPS inverters

Legrand SA
Full range of conventional and modular single-phase and three-phase UPSs

Mantech Electronics
Vast stocks of inverters and UPSs

MCE Electric
Onesto line interactive UPS and online UPSs

Phoenix Contact
Industrial UPSs

Regal Distributors
Stockists of UPSs

Silicon Engineering
BAE - Berlin industrial stationary lead acid batteries

Sinetech
UPS for all applications: 650 VA to 800 kVA

Sollatek Electronics
Full range of UPSs

Swan Electric
Full range of UPSs

Voltex
Distributors of UPSs in various kVA ratings

LIGHTING FOR HAZARDOUS AREAS

ACDC Dynamics
Distributor of Halo Lighting Solutions including LED strip lighting systems; wide range of flameproof and explosion-proof lighting

ARB Electrical Wholesalers
Full range of lighting for hazardous areas

Atlas Group
Distributors of luminaires for hazardous areas

BEKA Schröder
Full range of luminaires for hazardous areas

Bellco
Distributors of luminaires for hazardous areas

Citilec
Full range of lighting for hazardous areas

Clearline Protection Systems
Range of lighting for hazardous areas

Denver Technical Products
Wolf safety lamps and Smith Light LED lighting for industrial work areas

Electrahertz
Full range of lighting for hazardous areas

Eurolux
Vapour-proof fluorescent fittings; CFL enclosed 'bullet'

Genlux Lighting
Full range of lighting for hazardous areas

HellermannTyton
Silicone gel (Religel) used in critical circuits

Legrand SA
Full range of weatherproof bulkhead lights

LIGHTING FOR HAZARDOUS AREAS

Matelec
IP65 weatherproof fittings; IP66 utility enclosures

MCE Electric
O-Lite solar LED floodlights

Nordland Lighting
Full range of lighting for hazardous areas

Radiant Lighting
Full range of lighting for hazardous areas

Sinetech
Solar street lighting with five year warranty

Spazio Lighting
Full range of lighting for hazardous areas

Superlume
Zone rated lighting fixtures

Voltex
Distributors of luminaires for hazardous areas

Voltex Lighting
Distributors of luminaires for hazardous areas

OTHER

ACDC Dynamics
Large lighting offering including decorative, LED and general lighting applications

ACTOM Protection and Control
General protection relays

ARB Electrical Wholesalers
Electrical cables and wiring accessories; electrical contractors' materials

Arrow Altech Distribution
Protection modules; SPDs

Atlas Group
Full range of cables and wires as well as a range of overhead line equipment, mini subs and transformers

Bellco
All electrical industrial and commercial products as well as the associated accessories; Elespec power quality PFC and monitoring; MV and LV panels

CED - Consolidated Electrical Distributor
ABB, TosunLux, Uniclamp, Horizon

Citilec
LED energy efficient lighting

Comtest Distribution
Fluke battery tester

Crabtree South Africa
Electrical wiring accessories such as switches and sockets (domestic, commercial and industrial)

Denver Technical Products
Hannay reels for cable management

Eurolux
Inverters

ExSolar Solar Solutions
Backup solar UPS solutions, solar DIY kits, solar camping kits, solar batteries, solar panels and solar

Fusecomp
Electrical components

HellermannTyton
Stock various tools and test instruments including multimeters, clamp meters and insulation testers

LEDvance
OSRAM LED lamps, luminaires

Mantech Electronics
Large range of solar panels, solar regulators, power supplies, instruments, meters, cabling and accessories

Matelec
Cable glands

MCE Electric
Solar Pal PV inverters, solar panels and combiner boxes

Megger
Protection: cable fault, transformer, circuit breaker, battery and low voltage

NewElec
Three-phase motor protection and control relays for low voltage motors

Nordland Lighting
Full range of LED luminaires

Power Process Systems
Electrical enclosures and change-over systems with control

Shuttle Lighting Control Systems
Dimmers for LED, Halogen and Incandescent lights

Silicon Engineering
Silicon battery chargers for battery tripping systems

Sinetech
PV solar panels: monocrystalline, polycrystalline, CIGS thin film; power inverters; backup power systems; battery chargers; solar cable; solar mounting structures; solar connectors; battery management systems; solar charge controllers/charge regulators

Sollatek
Voltage protection (switches and stabilisers/regulators) 2 Amp to 2 MVA

Superlume
Recently launched Smart Home Wifi switches

Three-D Agencies
Cable accessories



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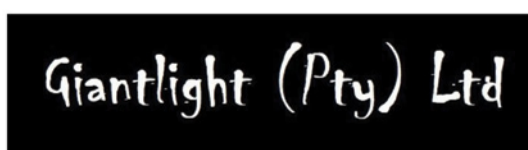
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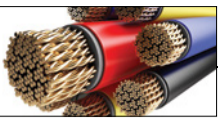


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Enel Green Power South Africa connects Karusa Wind Farm to national grid



Enel Green Power South Africa (EGP RSA) has connected to the electricity grid a 147 MW Karusa wind farm, which is located in a remote part of the Laingsburg Local Municipality in the Western Cape, and will be able to generate more than 500 GWh annually, potentially averting the emission of approximately 500 000 tons of CO₂ into the atmosphere annually. Karusa features the Vestas V136-4.2 MW wind turbines, the largest on the African continent to date.

Awarded to Enel Green Power in 2016 as part of round four of South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), the wind farm is supported by a 20-year Power Purchase Agreement with South African energy utility provider, Eskom.

With Karusa wind farm operational, EGP RSA now has six wind farms up and running, including Nojoli (88 MW), Oyster Bay (148 MW), Nxuba (148 MW), Gibson Bay (111 MW) and Garob (145 MW), with its Soetwater (147 MW) wind farm also expected to achieve commercial operation during July 2022.

Collectively, the company has 10 operational wind and solar projects in South Africa. Once all current projects are in operation, the business will have an overall installed capacity of 1,2 GW.

Manuele Battisti, Country Manager of EGP RSA, says construction of the Karusa facility commenced in 2019 and amounts to a 200-million-euro investment in South Africa.

"The COVID-19 hard lockdown and accompanying restrictions caused various delays and supply challenges for the project as well as limiting international travels. Enel Green Power overcame these strategic problems by using South African resources and harnessing technological solutions that allowed for remote interaction with col-

How solar plants should keep an eye on glint and glare

With more solar farms likely to be constructed near towns and settlements, developers will have to carefully consider the impact of glint and glare from photovoltaic (PV) panels before they proceed.

Global experience shows that sunlight reflecting off solar panels can cause annoying visual discomfort and even hazardous glare to surrounding receptors such as residents, motorists or pilots.

Sunlight reflecting off solar panels can be experienced in two forms: glint which is a momentary flash of bright light; and glare – a continuous source of bright light. Both glint and glare can result in an after-image, which is a visual illusion where an image persists after exposure to the original image has ceased. Motorists passing by may be affected, for instance, posing a potential traffic hazard – while nearby communities could be disturbed by sunlight reflections.

Recent changes to the licensing regulations for Independent Power Producers have opened the door for private renewable energy projects up to 100 MW. While most commercial solar projects to date have been located in remote areas, these developments may now be increasingly located closer to urban areas, according to Chris Dalgliesh, partner and principal consultant at SRK Consulting.

"We have seen a few solar projects being established fairly close to towns, and there will be more of these to come," said Dalgliesh. "This increases the likelihood of glint and glare impacting more often on human settlements and other receptors."

Sue Reuther, partner and principal consultant at SRK Consulting, highlighted that while there was generally a high level of public support for renewable energy projects, the growth of solar farms had shown that glint and glare could be significant visual impacts. As such, these aspects have become an essential component of Visual Impact Assessments (VIAs) that SRK Consulting conducts for Environmental Impact Assessments (EIAs).

Kelly Armstrong, environmental consultant at SRK Consulting and a specialist in modelling visual impacts, said that developers need accurate, science-based predictions on how their solar installations might affect the local environment.

"A range of parameters are loaded into glint and glare modelling software to assess whether the glint or glare from solar panels will impair vision or cause discomfort," said Armstrong. "This includes the project's precise location, local topography and the height of the mounted panels – as well as the axes and aspect of PV arrays."

leagues in other countries," he adds.

EGP RSA is committed to supporting South Africa to solve its energy crises through renewable energy solutions. It also employs local staff and hires local contractors in the construction process, with the aim of promoting meaningful socio-economic and enterprise development. At the peak of the construction process of Karusa and Soetwater, the business had 1 160 employees on site.

As part of its Creating Shared Value initiative, EGP RSA has assisted underserved communities in close proximity to the wind farm. One initiative involved the supply of 15 interactive smartboards and 15 laptops to the Acacia Primary School in Laingsburg as part of an educational support programme.

During the nationwide lockdown, which began in March 2020, EGP donated food relief parcels to approximately 200 families in vulnerable communities, in collaboration with the Laingsburg Local Municipality.

EGP RSA is currently looking to

empowering local SMMEs through its Enterprise Development Support programme. This could include support in the form of funding, income generating assets (equipment), skills development and market linkages, amongst others.

Other Socio-Economic Development projects focusing on education, healthcare, social welfare and skills development will be implemented now that the project is operational.

In addition, a community needs assessment will be conducted to identify the most pressing community needs and pinpoint any skills gaps within the beneficiary communities. The investment in these communities is estimated to be 800-thousand-euro per annum.

Battisti says while the employees at Karusa worked under extraordinary circumstances, they concluded their work with zero lost-time incidents: "Completing the project despite challenging circumstances is testimony to their hard work and resilience," he concluded.

Enquiries: www.enelgreenpower.com



The exact longitude and latitude determine the position of the sun across the seasons, allowing the model to account for the aspect of the sun on each day of the year. This is significant in measuring not just the occurrence of glint or glare, but to quantify exposure (minutes per day) to this impact.

Photovoltaic panels in a solar energy installation can be fixed, or can rotate on a single axis or double axis, she noted. The model requires specific parameters of the proposed PV array inter alia the panels' maximum tracking angle, resting angle and whether backtracking technology is used.

The position of the receptors relative to the solar energy installation is also critical. Typical receptors could include buildings, homes, roads and flight paths, with dozens of different points around the project all having to be assessed to understand the potential impact. Topography is important, as elevated areas around a solar farm could be more exposed to glint and glare. Dalgliesh noted that a viewshed is typically a vital component of visual impact assessments, and shows those areas (receptors) from which the solar farm would be visible.

"This spatial map guides our understanding of who or what will be visually affected by a development," he said. "We can then identify those receptors which are likely to be most sensitive to visual

impacts – including glint and glare."

The outcome of the modelling, explained Armstrong, is to accurately predict the exposure and duration of glint and glare impacts down to the minute each day – for each key receptor. "The accuracy of these models allows us to report very detailed glare results," she said. "For example, we can predict that a particular receptor would experience glare for a maximum of 15 minutes between 4:30 and 6:30 pm during the summer months."

This provides the basis for strategic decisions, either on the precise location or orientation of the solar farm, or on appropriate mitigation measures. While there are currently no legally specified thresholds for glint and glare, she pointed out that there are international best practice guidelines to follow.

"These guidelines incorporate tolerable exposure thresholds, viz. maximum 60 minutes per day, for more than three months of the year, above which mitigation measures must be implemented" she said. "Our reports include mitigation measures, aiming to avoid any glare affecting receptors."

Reuther highlighted that, as a leader in the field of EIAs, SRK is among only a few consultancies with advanced in-house expertise in glint and glare modelling – a niche likely to be in growing demand.

Enquiries: www.srk.co.za

CONTINUED FROM PAGE 5

Hitachi Energy awarded for best exhibition stand at 68th AMEU Convention in Durban

"It was also an opportunity for visitors to learn about our company. We had specialists on hand to present our solutions, services and products. Without a doubt, the production of sustainable, emissions-free renewable energy will become increasingly significant in the energy sector," said Michie.

Hitachi Energy's mission is to ensure that the world's energy system is sustainable, flexible and secure. The world of energy continues to evolve and therefore Hitachi Energy is developing its energy market reach and portfolio into new areas, expanding beyond the grid.

"It is crucial that we take on the challenge of accelerating the pace of change. We need to support this ongoing challenge with innovative solutions, and that is where Hitachi Energy continues to play a leading role," concluded Naicker.

About Hitachi Energy

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. It serves customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, it pioneers technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. The company is advancing the world's energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. Headquartered in Switzerland, the company employs around 38 000 people in 90 countries and generate business volumes of \$10 billion USD.

Enquiries: www.hitachienergy.com



Considerations for cannabis cultivation

By Mark Norris, Giantlight

If there is any doubt about the economic viability of cannabis as an agricultural commodity, the Cannabis Industry and ever-growing list of approved SAHPRA Licensed Facilities funded by both local and International Investors tells a very positive story. It is clear the burgeoning industry's value will continue to grow.

Concurrently, the need for cultivation and manufacturing facilities will expand as more SAPHRA license applications are activated with companies wishing to cash in on the crop. To be successful, these owners need design engineers who can specify the complex infrastructure needed for a bountiful harvest.

Cannabis is typically grown in controlled environments, such as greenhouses and indoor cultivation facilities. Such controlled environment agriculture facilities make it easier to meet certain government regulatory requirements. When designed correctly, these facilities also provide many benefits related to quality control and production.

Most indoor cannabis operations are vertically integrated facilities, with indoor cultivation, post-harvest processing, manufacturing, quality control and packaging functions under one roof. As cannabis legalization advances and drives market growth, there is little doubt that best practices for legal growth operations will continue to develop.

So, as a leading South African OEM in LED lighting design and local manufacture to the 'Growing Game', we have been exposed to the reality that there are many elements to this horticulture segment. There are many key focus subjects to understand and focus on, however, we have highlighted a few in this article to build a picture in words. In the meantime, be sure to rely on your HVAC, plumbing, electric, and lighting vendors for the advice you need to make sure that your indoor grow room is safe and efficient.

The management and reduction of variables sees a tightly controlled environment (of temperature, humidity, light, water, nutrients, carbon dioxide and airflow,) which leads to maximum yields and product quality. All of the above are equally important and play a role in the process of building a facility. To this effect, we are sharing our journey into the world of grow lighting.

Lights, lights, lights: Illuminating your options

Choosing the right grow light for your cannabis is among the most important decisions you'll make. From looking after seedlings and clones, working through vegetation phases to the ultimate flowering cycle with our LED product combination designs, ranging from 55 W through to 1000 W and more depending on your light level requirements, we want you delivering superb yields!

Most importantly, don't spend money on a grow light without becoming informed at first. A great 'bargain' may ultimately just be a waste of your hard-earned cash.

A typical indoor room when planning your LED lighting requirements

Indoor cannabis operations typically include four types of grow rooms, each with unique environmental conditions, grow light types and schedules, and plant densities. These rooms are typically referred to as mother, clone, vegetative (or veg), and flower.

- 1. Mother room:** This room contains large plants with the genetics desired for the production plants. The plants are typically used for six to eight months before being replaced. Mother rooms occupy a relatively small area in relationship to the other grow rooms, generally about 5 percent of the total cultivation space. Environmental conditions are typically 21 to 29.5 Celsius and 40-55 percent relative humidity (RH). Grow lights are typically kept on for 18 or more hours per day.
- 2. Clone room:** Leaves from mother plants are clipped and used to propagate new plants in small containers or trays on racks within the Clone room. After two to four weeks, the plants are transplanted to the Veg room. Clone rooms are roughly the same size as a Mother room. Clone room conditions can vary based on grower preferences, but

typically fall in the range of 15-26 degrees Celsius and 50-70 percent RH. Grow lights are on for 18 to 24 hours per day.

- 3. Veg room:** Plants are placed in larger containers on stationary or moveable benches, generally with two tiers or levels, and spend about six weeks at this stage. On average, Veg rooms will require about 20 percent of the total facility cultivation area. The space temperature can range from 21-29.5 degrees Celsius and humidity from 50 percent to 65 percent RH. Grow lights are kept on for 18 hours per day.

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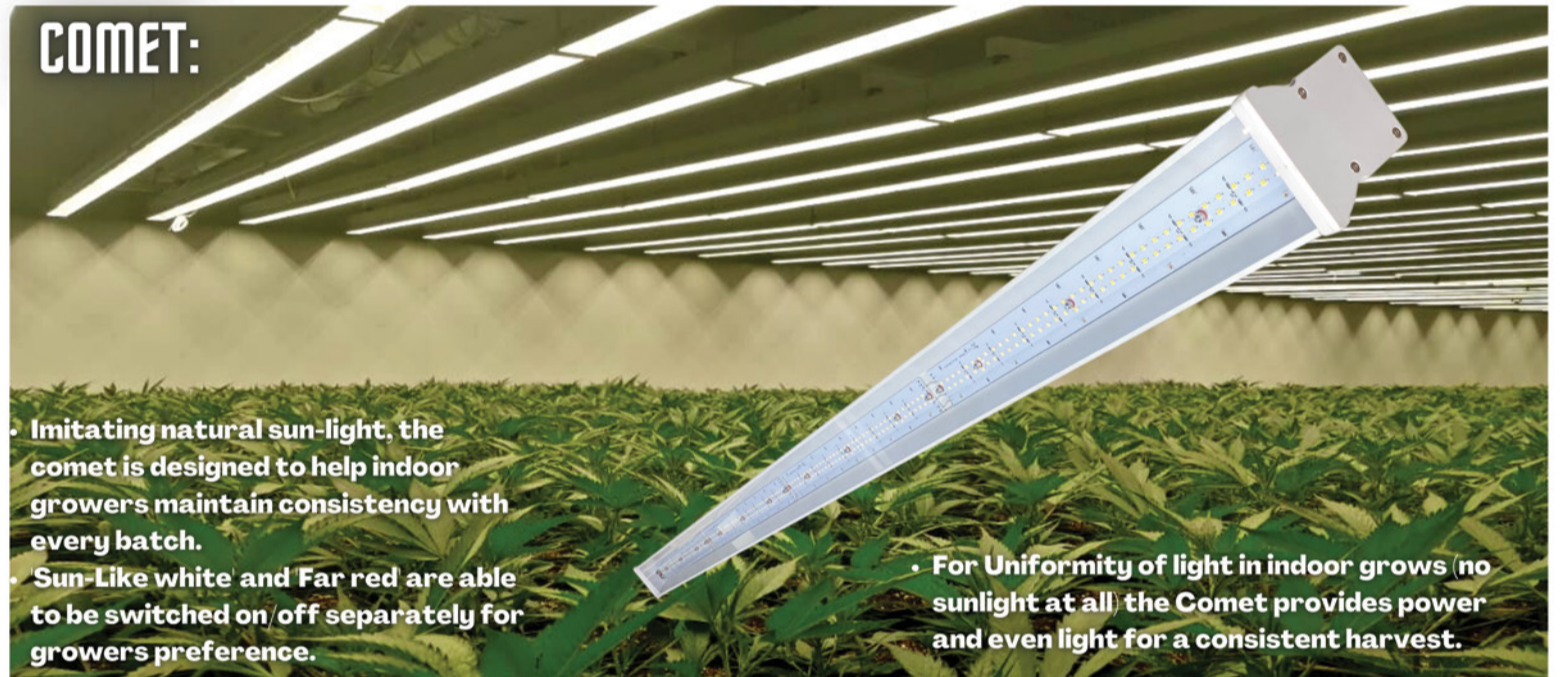
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Bathroom vanity lighting



When it comes to illuminating your bathroom vanity, you have three options for mounting – above the mirror, flanking the mirror or using an integrated fixture. Available space and design preference will dictate your choice.

Above the mirror

If there is no space next to the mirror, or you simply prefer the look of an overhead fixture, the ideal height for installation is ± 198 cm from the floor to the fixture above the mirror. Fixtures above the mirror generally require higher wattage bulbs than those that are positioned lower down.

Flanking the bathroom mirror

Mounting wall fixtures on either side of the mirror is considered the best spot to optimally illuminate your reflection in a way that is flattering and functional. Aim to position your fixtures about 165 to 178 cm from the floor to illuminate your face without creating awkward shadows.

Bathroom mirror light

If space is an issue, or you simply prefer a more streamlined look, a mirror with integrated lighting is a practical yet stylish solution. The built-in LED lights are connected to a power source and can be activated with the switch of a button.

Other considerations

When selecting fixtures for your bathroom vanity, take the overall design of the room into account. For example, would you describe it as modern, rustic or traditional? Introducing fixtures in this area is an opportunity to inject character into the space, or reinforce the existing design aesthetic.

- Be mindful of the sconce shades you select because their transparency and colour will impact how much light is emitted.
- If there is a shower or tub near your vanity area and you run the risk of water spraying onto your fixtures, opt for designs with an IP rating of 44.
- Large vanity? Consider mounting a dual sconce above in the centre, along with two single sconces flanking the mirror.
- Avoid placing a sconce on just one side of the mirror, as this will create uneven illumination.
- If you can avoid recessed lighting over this area of the bathroom, then do so, as they can cast shadows on the face.
- Larger bathrooms will need more than just vanity lighting to be well-illuminated. Additional light sources, like recessed lights and ceiling lights, should form the first layer of illumination.
- While clear bulbs with filaments are aesthetically pleasing, they're not practical for illuminating a bathroom vanity because they cast shadows. Opaque or frosted bulbs are the better option, especially if they will be exposed. When selecting light fixtures for this space, make sure that the wattage option of your chosen design supports the required light output. When using a single-light sconce, opt for a higher wattage bulb.

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Radiant Lighting offers an extensive product range to meet your architectural and building requirements, no matter how big or small. Whether it's ambient, task or accent lighting that your project requires, our lighting specialists can offer you professional and technical advice ranging from specifying and on-site supervisory to after sales services, all backed up by warranty.



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Solar streetlighting for Postmasburg



BEKA SOLAR streetlights have been installed throughout Postmasburg.

BEKA Schröder is proud to have supplied the LED solar streetlighting solution for Postmasburg in the Northern Cape Province, South Africa. BEKA Schröder's South African designed and manufactured BEKA SOLAR streetlights were installed throughout Postmasburg. This new streetlighting installation is the next phase of a previous project where these solar streetlights have been installed. Due to the proven high quality of these products, BEKA Schröder's lighting solution was chosen again.

The BEKA SOLAR streetlight for outdoor residential and public applications provides a full customizable option to suit all off-grid solar lighting requirements. Combined with the ZIYA luminaire, the BEKA SOLAR provides a reliable lighting solution with a high Ingress Protection level that withstands high ambient temperatures and vandalism. These luminaires are a sustainable off-grid performer with a superior lumen/watt ratio.

Further advantages of the BEKA SOLAR include:

- It has been specifically engineered for all geographical locations in Africa.
- It has been designed to operate between high



Signify's new A-class LED tube: an innovative solution for rising energy prices

Signify has expanded its Ultra Efficient product lineup with its most energy-efficient LED tube to date. Thanks to its high efficacy, the Philips MASTER LEDtube can help customers tackle the global energy crisis, mounting pressure to lower carbon footprints, and stricter government regulations.

Signify broke new ground last year with the launch of the Philips LED A-class bulb, which consumes 60% less energy than a standard Philips LED. The MASTER LEDtube Ultra Efficient continues this technological innovation to expand the portfolio of energy-efficient products, which meet the A-grade criteria of the new EU energy labeling and eco-design framework. Under these updated rules, lighting products need energy efficiency of at least 210 lm/W to receive an A grade, the highest rating.

A typical small business with 100 fluorescent tubes would receive great savings per year by switching to the A-class Philips MASTER LEDtube UE (calculation based on 100 x 58 W fluorescent lamps with a lifetime of 20 000 hours vs 100 x 17.6 W Ultra-Efficient LED tubes with a lifetime of 100 000 hours; 0.29 euro energy cost/hour; 5 euro replacement cost per lamp; 8760 burning hours per year). With a 100 000-hour lifespan, the new tube lasts five times longer than its conventional MASTER TL-D counterpart. That removes the need for regular replacements, which increases cost savings while reducing waste.

"Through extensive innovation, we've created our most energy-efficient tube yet, and now's a time when it's needed more than ever," says Maciej Debowski Product Manager: LED Lamps and Luminaires Signify South Africa. "Especially in industries, warehouses, offices, schools and retail spaces, where all-day lighting is required, switching to ultra-efficient LEDs can sharply reduce energy usage related to lighting."

Sustainability is central to Signify's strategy and is a key element of the product design process. Compared to a fluorescent tube, a new Philips MASTER LEDtube UE can reduce CO2 emissions by up to 2,285 kg over its lifetime (Calculation based on CO2 gas emissions of 0.42 kg/kWh) – equivalent to the emissions absorbed by more than 100 trees. (Based on multiple scientific literature, an average fully grown tree can absorb 22 kg CO2 per year).

Signify has long been driving the shift from conventional fluorescent lighting to the more environmentally friendly LED. With the amended RoHS (Reduction of Hazardous Substances) high-performance LED lights have an ever more significant role to play.

"We continue to expand our range of ultra-efficient products, in our drive to have the most energy-efficient portfolio across technologies. With ultra-efficient GU10 LED spots on their way in February 2023, in addition to the currently available bulbs and tubes, our portfolio caters to every application," says Maciej Debowski.

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 - Warranty up to 5 years (Terms and conditions apply).
- The BEKA SOLAR offers a renewable lighting solution to operate in any of our very challenging African environmental conditions.

BEKA Schröder locally develops and manufactures sustainable LED lighting products, designed and suitable for local conditions. The company is proud to be associated with BVi Upington in providing a sustainable LED solar streetlighting solution for this project.

Enquiries: +27(0)51 430 5371



Standards and compliance for emergency lighting

Continuing the August theme based on "Standards and Compliance", this month I will highlight the shortcomings in our SANS 10114-2: Interior Lighting: Emergency Lighting and then, excuse the pun, I will enlighten you about the detailed international standard I.S. 3217, which is the base standard used by the UK and EU countries. It is streaks ahead of our local standard and leaves nothing to chance and no stone unturned. The detail is far-reaching.

The full reference is I.S. 3217:21 + A1: 2017: Emergency lighting and Amendment 1: 2017. Remember that if you would like to purchase a copy, you can do so

online. Each copy purchased is registered to the purchaser exclusively.

It is impossible to provide you with a paraphrased version of the content of this 92-page Standard. I will rather highlight those aspects that have been omitted from SANS 10114-2 and aspects that are always contentious. Some of the latter arise when consulting engineers plan to use UPS or Inverter systems to power the emergency evacuation lighting. I.S. 3217 addresses these aspects and in doing so removes any doubt and wrong practise.

In addition, there is a substantial list of other international standards which have adopted the standards

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included in I.S. 3217 including Central Power Supply Systems, UPS systems.

The simple answer to whether these other systems can be classified for use in emergency evacuation lighting, is no. However, there are some exceptions in special instances. The general basis is that mains power, whether from the power utility or a UPS, Inverter System or solar via an inverter which continues to provide 230 V power, does not go well with water in the event of a fire.

SANS 10114-2 makes scant mention about when and under what circumstances a UPS or Central Battery system may be used. I.S. 3217 gives very clear and unambiguous details on these emergency systems. But, once again, they are generally not regarded as being efficient or suitable for emergency evacuation lighting.

What about Measurement and Verification? I.S. 3217 details Measuring illuminance of emergency lighting in Annex A. It details measuring to ensure that the emergency lighting meets the emergency lighting design illuminance and how the measurement must be done.

It details the file that must be kept and maintained for the emergency lighting of the facility which must contain the following:

- Certificate of Design.
 - Certificate of Installation.
 - Final Certificate of Commissioning.
 - Certificate of Handover.
 - Certificate of Annual Inspection.
 - Report for Inspection, Testing and Servicing.
 - Report following Annual Inspection and Testing.
- There is also a full list of the Emergency Lighting Requirements for the Certificate of Annual Inspection and Testing.

The Record of Emergency Lighting System schedule for periodic inspections, tests and servicing due dates must also be maintained.

After the installation has been checked and the Certificate of Installation has been issued, the emergency lighting system must be tested. This in practise means that the facility must be placed in emergency mode for the emergency self-contained emergency evacuation route lights and every self-contained emergency light must be monitored to check the full endurance until failure. Each emergency light point of failure must be recorded. Once all emergency lights have reached the point of failure, they must again be monitored to determine the time that it takes to reach a fully recharged state. Again, each emergency light performance in this process must be recorded. It will also be important to ensure that each emergency light performs beyond the required time required for the specific installation depending on the number of floors in the building and the size of the facility.

To many, this may be unfamiliar and new. I urge all professional consulting engineers and fire prevention engineers to purchase a copy of this standard. You simply cannot afford to be without one.

Finally, remember to read these standards with SANS 10400-T.

I repeat my willingness to assist any of the readers and give basic advice about lighting to minimise their risk of non-compliance. Until the next episode in the fascinating journey into light and lighting next month, stay safe!

Enquiries: phil@bhalighting.co.za



Solar lighting FAQs

Are your clients interested in buying or installing solar lighting? The experts at Eurolux answer some of the most frequently asked questions to assist you in guiding your customers.

Q: Do solar fixtures require exposure to direct sunlight?

A: While exposure to direct sunlight will charge your solar fixtures at a faster rate and enhance their performance, it's not a necessity. They'll still charge on a cloudy day, just at a lower voltage.

Q: Can they withstand exposure to the elements?

A: Solar fixtures are made for the outdoors and can certainly withstand exposure to the elements, especially in South Africa where our weather is fairly mild. They're generally crafted from durable plastic and rust-proof metal and typically have a waterproofing rating of IP65. With that being said, extremely windy conditions can cause hanging fixtures to fall off their hooks. In this case, it is better to remove the fixture and bring it indoors for safekeeping until the wind subsides.

Q: Are there batteries in solar lights?

A: Yes, solar fixtures consist of a solar cell, Ni-Cad rechargeable battery, LED light and photoresistor. They harness the power of the sun during the day, storing that energy in the battery to be used at night.

The photoresistor detects a change in the level of light, which in turn activates the battery and turns the LED on.

Q: What are the benefits of outdoor solar lighting?

A: Solar light fixtures offer a multitude of benefits. They are:

- Economically friendly.
- Better for the environment.
- Easy to install and move around.
- Simple to maintain.
- Safe for environments with pets and children.

Q: How long does outdoor solar lighting last?

A: If you take good care of Ni-Cad rechargeable batteries, they should have a lifespan of about two years. LED bulbs will offer up to 30 000 hours of illumination. To get the most out of your fixtures, regular maintenance is essential. Use a damp, lint-free cloth to gently wipe the solar panel clean at least once a month. Once the dust, dirt and grime is removed, wipe it with a dry cloth.

Q: How many hours of illumination do they offer after being fully charged?

A: The average fixture offers between 8 to 12 hours of

illumination.

Q: What causes decreased performance of a solar fixture?

A: The culprit may be reduced sunlight hours. Turn the fixture off and allow it to charge for two to three sunny days without using it. This will allow the battery to recharge and operate as normal. If this does not work, it could mean that the battery needs replacing. This sometimes happens after around two years.

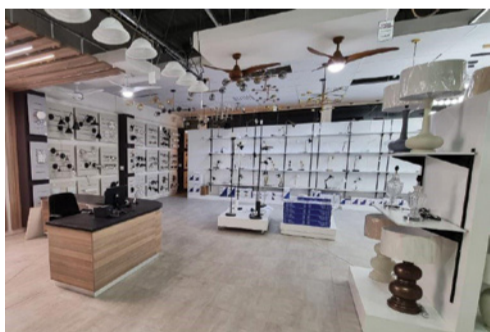
Enquiries: www.eurolux.co.za

Eagle Lighting opens new Pretoria store

Established in 1924, Eagle Lighting are suppliers of lighting and lighting accessories for domestic and commercial projects and offer a wide range of LED energy efficient solutions. The retail division has amongst the largest lighting showrooms in the Western Cape, George, Knysna, Hermanus, Port Elizabeth as well as a new showroom in Woodlands, Pretoria which opened in September 2022.

At the new store, located at the Woodlands Boulevard Shopping Centre in Pretoria East, Eagle Lighting has everything you need to brighten up your space, the light way. The company are suppliers of light fittings and accessories for commercial and domestic projects, and offer a wide variety of decorative and essential light fixtures.

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BASE E14

Also available: B22

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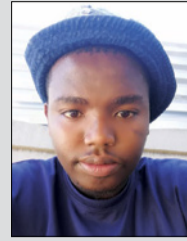
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BRIGHT SPARK

LOCKED OUT

After a long night of partying with her friends, a woman arrives home and finds that she cannot enter the house. She's certain that she's at the right home, but she cannot get inside. What happened that makes entering her home impossible?

OCTOBER SOLUTION

The third room.

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