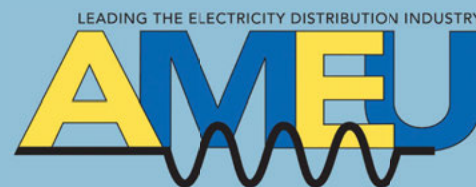




# AMEU NEWS

THE ASSOCIATION OF MUNICIPAL  
ELECTRICITY UTILITIES OF SOUTHERN AFRICA



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## A MESSAGE FROM THE AMEU PRESIDENT...

*Although our newsletter is only scheduled for posting in March, and knowing that you will read this after the year is no longer "new", I write this early in January and therefore have great pleasure in offering you my best wishes for a prosperous and successful 2019.*



Refilwe Mokgosi

For our industry this will surely mean that we will strive to meet the needs of our customers by supplying a quality electricity supply at a reasonable cost.

The indications are that this will not to be easy to achieve. With our primary supplier, Eskom, under extreme financial and technical pressure of various kinds we cannot be blind to the likely affect this will have on us as municipal utilities in various direct and indirect ways.

And this is not the only problem. Many of our municipal utilities have huge challenges with revenue collection. Also, the shortages of technical staff in many cases reflect in quality of supply and service delivery problems which, coupled with escalating costs and funding difficulties, ultimately place a strain on the sustainability of our businesses.

In my acceptance speech at my inauguration I posed several questions on matters that I perceived to be important to our industry, and for which we need to work towards for solutions.

One was .....Are we as the ESI ready for the energy revolution and its impact?

And is the industry realistically ready to address the issue of cyber security?

Will our thousands of university students be employable in the next 5 years?

Are we training and educating future employees in line with the needs of the 4th industrial revolution?

It is an open secret that the current business model of our utilities is under scrutiny. Many consider in unsuited to changes in

the operating environment and associated technologies.

But we are a resilient and enterprising industry and the AMEU is actively providing support to our members and giving inputs to assist the authorities and participants involved in finding solutions to the many problems. Some of these, like the formalizing a Service Delivery Agreement with Eskom have been under discussion for a long time..... we are pressing for solutions at every opportunity.

My wish is that we, the AMEU, as an organization dedicated to supplying our citizens across the country, will be able to play a leading role in finding answers to at least some of the intractable problems that affect our daily operations.

I look forward to widespread participation in these processes from our membership as we chart various ways forward and I encourage you to play an active role in your local Branch affairs as these and other matters are debated. Your concerns and ideas will assist the Executive as we try to address issues at a national level.

It is my sincere hope that we can move the industry forward in the services to our customers, the citizens of this great country.

Greetings,

Refilwe Mokgosi, AMEU President

**OVER THE PAST 20 YEARS WE HAVE SUPPLIED SOME OF THE LARGEST RETICULATION PROJECTS UNDERTAKEN IN THE SOUTH AFRICAN ELECTRICAL DISTRIBUTION INDUSTRY (EDI).**



## Nature of Business

- Power Process Systems is an Electrical Enclosure and Distribution Equipment Manufacturer. We have a fully equipped manufacturing, assembly and wiring facility and all components of our products are produced in-house. We have identical facilities in both Jhb and Cape Town.
- We cut, bend and nest the various enclosures, racking assemblies and mounting frames in our CNC plant, build and construct these components in our fabrication facility and fit, wire and assemble the finished, functional Control, Distribution or Metering panels or Enclosures ready for FAT testing in our assembly bays.
- We predominantly supply to the electrical infrastructure market with the main focus on Reticulation (underground and overhead) and Commercial Distribution and Metering Panels. We have also supplied many MCC and Control Panels to various Water-Works and Mining Companies but this is not our core business - it is a service we offer very effectively to our existing clients however.
- Options in mild steel / 3CR12 / stainless steel / polyethylene / fibre glass or DMC available
- We are OEM and product partner to CBI, ABB, Schneider Electric, Hagar, Legrand, Philips Chint and many, many other common switchgear brands.
- We have an ISO 9001/2008 SABS quality accreditation and are a SABS accredited production facility for electrical assemblies under 10KA.

### FOR MORE DETAILS CONTACT US:

Email: [ash@ppspower.co.za](mailto:ash@ppspower.co.za)  
Web: [www.ppspower.co.za](http://www.ppspower.co.za)  
Telephone: 0861 777 769 (PPS POW)  
Fax: 011 494 3572

MANUFACTURERS OF: Distribution Pillars | Switchboards | Surface & Flush Mount | Panels | Meter Kiosks | Pole Mounting DB's | MCC's | Boundary Boxes | Nama Enclosures | Free Standing, Wall Mount & Pole Mount Enclosures. We Accommodate all Non-standard Requirements.



Assemblies manufactured to SABS 1765 for the safety of distribution boards

Directors: MM du Toit | C du Toit | EO Toth



## HIGHVELD

Combined Private Investigations (CPI) hosted the 289th meeting of the Highveld Branch at their offices in New Road, Halfway House, on the 21st February, 2019. More than 60 people attended, including a delegation of colleagues from the Nelson Mandela Bay Metro who were visiting Gauteng on the day.

The Chairperson, Mokgadi Magemba, welcomed all delegates to the meeting. After completion of the various formalities she noted that the AMEU Strategic Adviser was not able to attend and invited the Branch secretary, Tom Mutshidza, to present a summary of the key issues currently under consideration by the AMEU Executive.

These include interactions with various Departments concerning the awaited directive on municipal wiring inspectors and matters relating to the declaration of electricity supply as an “essential” service, conditions for “re-sellers”, wheeling charges and grid code compliance assessments. Other matters include an MoU with Eskom to facilitate Municipal staff being able to access Eskom’s training programs, and problems relating to the pre-payment metering token roll-over date.

Punkie Majola, Chairlady of the WiE group, updated the meeting on recent developments in this group. One of the points made was the need for on-the-site training opportunities and mentorship for the women trainees. An appeal has gone out to affiliate companies to assist in this area if at all possible. Progress is being made with the establishment of branches of WiE in the various areas.

Technical presentations included one from CPI giving details of the equipment, processes and monitoring systems which the company provides to improve security of network plant and equipment, and the back-up available in the event of intrusions.

HIKVISION representatives made a presentation on Artificial Intelligence and its use for a “smarter” future. The company supplies multi-dimensional systems including sensors, surveillance, control systems and other facilities.

Edgeline Engineering’s Dave Turton outlined the company’s high security systems including pavement boxes, mini-sub enclosures, substation doors, etc, and the “smart” locking systems that are now available.

The Affiliates representative advised attendees that the 2019 annual golf day would be held on 23<sup>rd</sup> May at the Glenvista Club and the Business Leaders Breakfast at the Woodmead Country Club on 5th September.

Other matters discussed include the finances of the Branch and the collection of fees for presentations, and the need for changing the existing system of “one year terms” for the office-bearers of the Branch. It was agreed that this will be changed to a two year cycle.



# MORE BRANCH NEWS...

## HIGHVELD

The final item on the agenda was a short “hot topic” debate on the sustainability of the present municipal distribution entities. From the comments it was clear that compared to the days when many municipalities regarded the income from electricity sales - and the surpluses often achieved - as a convenient source for cross-subsidizing non-profitable municipal services, the situation has changed dramatically. Loss of electricity revenue from theft and increasing levels of embedded private generators, compound the problem created by the rapid escalation of Eskom tariffs and other operating costs. Lower sales due to consumers cutting consumption to save money add to the difficulty of attaining a surplus on the electricity account.

Contact details of the office-bearers are as follows;

**Chairperson:** Mokgadi Magemba

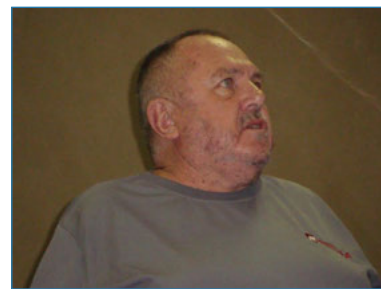
City Power, 072 560-1955, 011 490-7010,  
mmagemba@citypower.co.za

**Vice-chairperson:** Paul Vermeulen

City Power, 083 278 3903, 011 490-7211,  
paulv@citypower.co.za

**Secretary:** Tom Mutshidza

City of Tshwane, 083 651-0388,  
nndwamatom@tshwane.gov.za



## IN MEMORIAM

### Willie Opperman

It is with great sadness that we record the death of Willie Opperman on 1st December 2018. He was 60 years of age and had been in hospital where he underwent several operations after being involved in a motorcycle accident.

Willie was well known in the electrical industry and had been part of the BekaSchreder team for 25 years. He was an amazing individual, much loved and respected by all his colleagues, customers, and friends.

He joined the BEKA Schröder's Cape Town branch in 1993 as a Sales Representative, where he worked until 1994. In April 1994 he was transferred to Bloemfontein as Regional Manager for the Free State, Northern and Eastern Cape. where he remained until 1999, when he was appointed as the Regional Manager in the



*Willie opperman*

Johannesburg branch. His achievements speak for themselves. Under his leadership the branch grew to be one of the leading branches of the company.

At the beginning of 2018 he was appointed Business Development Manager for South Africa.

He lived a colourful life, having been a member of the parachuting battalion during his compulsory military career, and as a boxer, having fought twice for the South African Light Heavyweight Boxing Title. He was also a phenomenal storyteller.

His open-minded personality coupled with competence in Lighting made him a successful Manager.

Willie will be sorely missed by all. Our sincere condolences go to his family.



## Billy van der Toorn - August 1937 – February 2019

It is with great sadness that we record the death of Billy van der Toorn, a well known and highly respected member of our industry and Association.

His early training took place in the Telecommunication section of the South African Post Office in the 50's before joining Eskom in 1959. He retired in 1999 after 40 years of service.

For the first few years Billy worked in Eskom's Telecoms department with his duties encompassing the maintenance and commissioning of the telephone system throughout the then Rand and OFS Region. In due course he was promoted and headed the telephone Exchange Department.

Within a few years he changed direction and ran the Telemetry section which evolved into Eskom's first SCADA (Supervisory, Control and Data Acquisition) system.

Initially only 3 remote terminal units (RTU's) were installed, one at the Hendrik Verwoerd Hydro Power Station (now Gariep Dam), another at Hydra Sub-Station (De Aar) and the third at the Droerivier Sub-Station (Beaufort West). They were linked to a computer at Nation Control computer at Simmerpan via Eskom's Radio and Power Line network enabling National Control to monitor and control these stations.

With Billy in the lead, helped by Jonah Esplin-Jones (a Scottish immigrant) and Rick St. John, the SCADA system grew until all of Eskom's National Transmission sub-stations were placed on line giving National Control the ability to manage and control the power network nationally. At one stage Billy was sent to America to obtain more in-depth training.

Over the years, following various organisational changes, he headed the Division that included National Protection, Telecommunications and Measurements and other special projects.

Billy played a major role in recruiting



Billy van der Toorn

pupil technicians and engineers-in-training eventually becoming their "foster Father", well liked and respected. He participated in Business Unit (BU) forums (the interface with Labour and Trade Unions) where he excelled by being firm with a very good diplomatic attitude.

Everything Billy tackled he did with passion, so much so that everybody respected him; from friends to foes. He was a great diplomat fearing no-one and rubbed shoulders with many from the CEO, Senior Management to artisans, pupil technicians and general workers.

After his retirement from Eskom in 1999, he joined Nu-Lec Africa where amongst other things he was instrumental in helping that company achieve their first Eskom National Contract in 1999.

Billy was also well known for his sporting abilities and played soccer and cricket for Eskom's teams in the top amateur divisions in the then Transvaal. He eventually became the Eskom Rosherville soccer club secretary and further progressed to being their chairman. He was also a very competitive golfer and was well known and respected by everyone with whom he had contact..... a man, a gentleman, a friend and mentor.

Rest in peace Billy.

*We record special condolences to his wife Moira and their family on behalf of the many readers of AMEU News who counted his a friend. Ed.*

## IN MEMORIAM

### Dennis Palser

It is with regret that we record the death of Dennis Charles Palser, CEE of the City of Cape Town from 1974 to 1986.

He was a regular contributor to AMEU activities and amongst other things delivered a significant paper on the economics of electrical engineering to the 1981 Convention.

Dennis was born and raised in Cape Town and started his engineering career in the then telephone section of the Post Office as a trainee technician. He left to study at UCT and in his final year - 1950 - was a "Gold Medalist" student. He graduated with a B.Sc in Electrical Engineering "with distinction". He then joined the City's Electricity Department and worked his way up through the ranks until finally taking charge of the utility in 1974 at the age of 48.

He was a brilliant engineer and manager. He did not take kindly to undue pressure of a non-technical nature on decisions which he considered essential to the integrity of the undertaking. Some of the landmark projects that reached fruition under his guidance were the Steenbras Pumped Storage system, the then new electricity Control Center and the adoption of 132kV as the primary HV transmission voltage.

He died after a long illness at the age of 91.

We record our sympathy to his relatives in their bereavement on behalf of those of our AMEU News readers who still remember him.

Rest in peace Dennis.

## GOOD HOPE

*The November 2018 meeting of the branch took place on 8/9th in Witsand and was well attended with some 17 Utilities and 37 Affiliate companies represented. Including the 7 Retired Members, there were close on 100 delegates on each of the two days.*

After the welcome and other formalities the meeting received a presentation on “Integrated Infrastructure Master Planning using the GLS methodology” by Hilton Baartmann of GLS Consulting. The company uses software to extract billing and other data and to develop models for load forecasting and simulation programs.

This was followed by Conlog’s Matt Jackson discussing the company’s “X” range of meters which incorporate anti-tamper and numerous other security-related features.

How the catastrophic failure of high mast poles can be avoided was the topic of another presentation, this being given by Stewart Heynes of Global Spec. The company offers surveys, inspections and on site testing, all designed to ensure the safety of this equipment and achieving its designed life-span.

Sahar Javdani, Schneider Electric, gave a presentation on “smart grids” which included statistics on the future demands and trends in electricity supply and followed this with – amongst others - the processes required to locate faults and restore supply to customers in these networks.

The first day’s proceedings were concluded with a report by the Chairman, Siyabulela Gqwede, on the recent Exco





meetings. These included feedback on the Tshwane/CSIR Convention and various other matters under discussion by the Executive.

The second day's proceedings were opened with a report by Rens Bindeman on the recent SARPA Convention which was held in Bellville. He noted that some municipalities have requested assistance when addressing leads on incidents of tampering in "unsafe" areas. A pilot task team is being set up to try to assist in these instances. The MoA with SAPS has been signed but certain internal issues in SAPS must be resolved before taking this forward.

Details of the new management and ownership of the Powertech transformer manufacturing facilities were then explained to delegates, followed by a presentation on "Public Lighting Solutions" by Francois van Tonder of Power Matla Innolumis.

Tank Industries' Kobus van Eeden and Corry Marinus gave details of the products and accredited training facilities available from their company and Charmain Peter of IST gave delegates details of the "AMI" (Automated Metering Infrastructure) system now available to assist with the overall management of utilities.

Thabiso Moiloa presented information on the latest technologies now available in the Pre-payment metering environment from the Landis & Gyr organisation, and Daniel Chevin showed delegates details of equipment now available to assist with the upgrading of existing street light and other luminaires by retro-fitting "ready to install" self-contained LED units. These can save up to 50% of the cost of conversions and his company Leasealite-led-lighting are currently testing equipment in the Saldanha Bay area.

It was announced that the Department of Local Government are looking for municipalities that want to do an update of their Electricity Master Plans for the 2019/2020. More information can be obtained from the Department's Leon Eksteen.



Extracts from the AMEU Strategic Adviser's Exco Report were presented including the following;

- There is no progress with the preparation of a SDA with Eskom to cater for communities located in municipal areas but taking supply from the Eskom networks.
- The request from NUMSA to have electricity declared a non-essential service has been withdrawn.
- Discussions are taking place concerning the level of Municipal debt to Eskom.
- The solar water program of the DoE has been brought back on track and about 20 municipalities have been selected to participate.
- Potential difficulties with the MISA project designed to assist munics by providing "standard" specifications and purchasing procedures for materials and equipment has been debated.

**(NB; Anyone wishing to have more details of these and the many other items being handled by the S.A. should contact Vally Padayachee directly. Ed.)**

Eskom's Joe Coelho reported on the electrocution of a child on a 132kV transmission line tower following a dare to the youngster to climb the tower by peers. There are indications that this is now happening more frequently and it is a matter of great concern to all utilities.

The dates and places of the next meetings are as follows;

15th February, 2019; Paarl.

10th May, 2019; Bellville.

16th August, 2019; Vredendal.

7/8th November, 2019; Plettenberg Bay



## PAARL BOYS HIGH CELEBRATES 150 YEARS...

2018 was a special year for Paarl Boys' High School, ..... they celebrated their 150th anniversary!

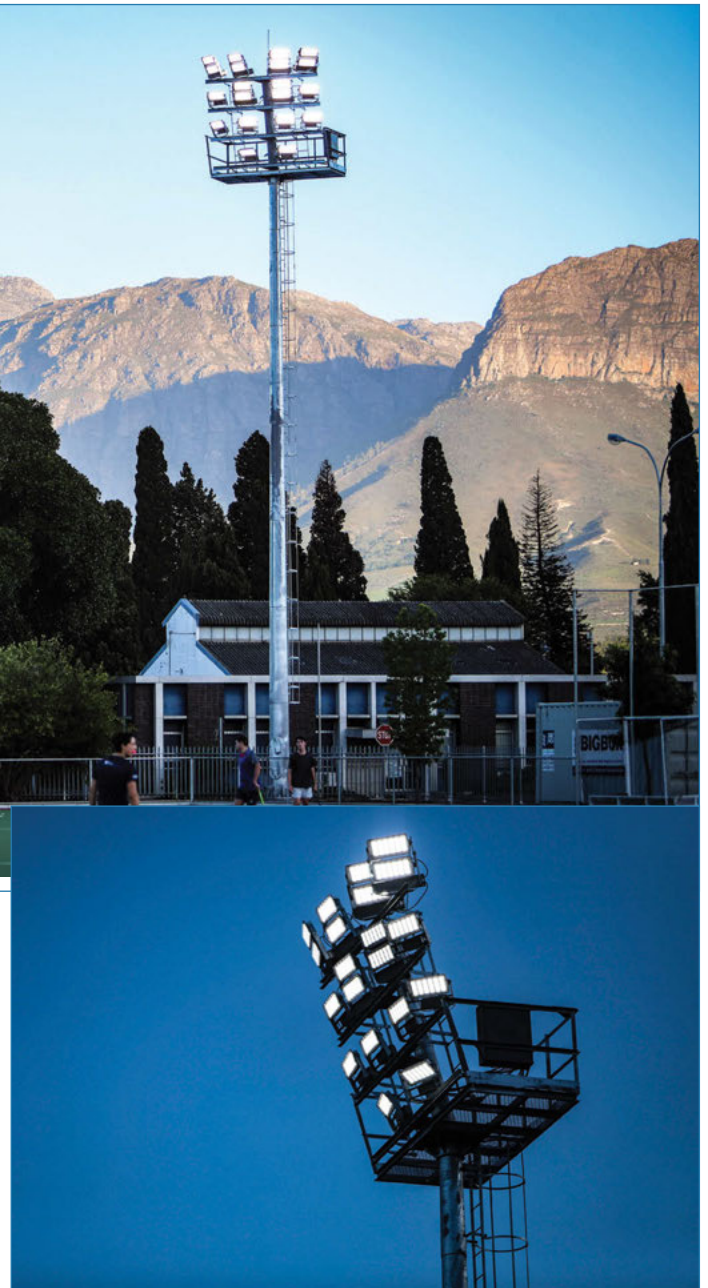
Located at the foot of Paarl Mountain, this school is one of the oldest in South Africa and steeped in tradition. However, this does not stop them from staying ahead of the times..... as part of the celebration, the school commissioned their new Astro hockey field.

Floodlighting was included in this prestigious project and the recently launched OMNIBlast-E was the floodlight of choice. A mixture of OMNIBlast-E-1 and OMNIBlast-E-2 LED floodlights were installed to get the desired illuminance level on the field.

The benefits of LED technology were recognised which include instant strike when switched on and easy dim-ability to the required lighting levels using DALI controls. Three switching stages have been set: Stage 1 at 75 Lux, Stage 2 at 150 Lux, and Stage 3 at 350 Lux.

The biggest advantage of using DALI for dimming in this application, is that the high light uniformity level remains through all dimming stages. Also, using DALI dimmable control gear results in further energy savings over what this technology already provides when compared to traditional light sources. Other benefits include prolonged LED lifetime and no maintenance.

The locally manufactured OMNIBlast-E is the ideal tool for sports venues and other very large area applications that require a lighting solution with the highest efficiency and flexibility to adapt to the different lighting needs. Available in three sizes, this new LED lighting solution offers an alternative with proven benefits over traditional fixtures fitted with 600W to 2000W HID lamps. A modular concept of optical units means that 1, 2 or 3 modules can be mounted on a similar bracket arrangement to offer



the utmost versatility, providing light distributions and lumen packages perfectly adapted to the specifications of the area to be lit. The OMNIBlast-E incorporates a patented cooling technology that maximises its lifespan and lumen output.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. They are very proud to be associated with Paarl Boys' High School and Eimac Consulting Engineers in providing a successful floodlighting solution for this prestigious project.

For further enquiries, contact Riaan Bubb at 021 510-8900 or [r.bubb@beka-schreder.co.za](mailto:r.bubb@beka-schreder.co.za)





# OMNIBlast-E

Modular LED floodlighting solution

Manufactured in South Africa, thus taking Africa's harsh environments and conditions into account

Flexibility through modular design: Three sizes for various applications

Superior optical efficiency, advanced control options and high energy savings



+27 11 238 0000  
[www.beka-schreder.co.za](http://www.beka-schreder.co.za)



**BEKA Schröder**  
Experts in lightability™

# OPTICAL FIBRE COMMUNICATIONS



Sir Charles Kao

D r a m a t i c changes and developments have been a feature of engineering and technology through the millennia. One of these, barely

10 years old, is the move from electric current based communications to light based systems - fibre-optics - and is a typical example of how dramatic these changes can be.

A recent announcement of the death

of Sir Charles Kao (on 23rd September 2018) prompted an internet search that some of our readers will find interesting.....

This Shanghai-born electrical engineer and physicist was a resident of Hong Kong. He obtained his degree in engineering from the then Woolwich Polytechnic in the UK and went on to head up the team in Standard Telecommunication Laboratory in Harlow, Essex, studying optical fiber communications.

His observation of the transmission of light through silica rods led him to believe that vapor-grown fused

silica was a low-loss material with the potential to transmit light very efficiently. His findings resulted directly in the "explosion" of fiber-based communications world-wide.

Over 300 million km of silica-fiber cable are now installed annually to meet the needs of the ever increasing numbers of internet connected devices including our "smart" phones.

In 2009 he was awarded the Nobel Peace Prize in Physics for his work, and was knighted a year later. He was known for the support and encouragement that he gave to young researchers.

## UPDATE ON ENERGY STORAGE

A 5 MW demonstration project to store surplus energy and release it back into the grid when required, has recently been commissioned in the UK. It is located near Manchester and inter-alia comprises two large vertical low pressure "tanks" that hold liquefied air. With air turning from gas to liquid at -160deg C the tanks are highly insulated and are designed for storing liquid air at -180deg C.

The air is released through turbines to generate electricity when peak loads need to be met. The company Highview Power, believes that because the equipment used in the plant is basically "standard" technology – meaning that there are no hidden "nasties" for safe disposal at the end of the plants designed life – there will be practical and economic benefits accruing to a "utility scale" plant currently under construction.

## DID YOU KNOW ..?

*"There is nothing a government can give you that it hasn't taken from you in the first place."*  
Winston Churchill.

According to calculations by the Free Market Foundation, in order to meet their tax obligations to government in 2018, all monies earned by South Africans up to 12 May, was paid over to the fiscus in one way or another.

Put differently, Tax Freedom Day was 13th May, 2018.

In New Zealand it was 7th May and the USA was 19th April.

Figures for Australia and the UK were not available for 2018 but in 2017 their Tax Freedom Days were respectively April 13th and 12th June.

To paraphrase another of Sir Winston Churchill's famous comments.....  
*"A Nation that forgets its past has no future" .....*





Eskom

## Fact sheet

### Check your geyser and pool pump timer settings

There is a possibility that the timer settings on your geyser and pool pump, and all other household appliances fitted with a timer, may be affected by load shedding or a power outage.

After power has been restored to your home, **check that the timer on your geyser is still set correctly to operate outside of 5pm - 9pm** - the thermostat switches the element on and heats the water to a set temperature every time the temperature drops 2°C to 3°C.



60°  
55°







In summer, make sure that the timer on your pool pump is still set to run **6 hours per day and filter the water twice every 24 hours.**

Also regularly replace the timer's backup battery or replace the whole timer in the case of a sealed unit.

Enjoy the **convenience of electricity** by using it **smartly.**

Visit [www.eskom.co.za/idm](http://www.eskom.co.za/idm) for more **energy use tips** at home.



Eskom's "problems" are well known to most of our readers. All or most have been, or will be in the near future, affected in some way by those "problems" specifically relating to shortages of generating capacity, ....whatever the cause.

And, we have been warned that these are unlikely to "....go away any time soon.."

This fact tends to be overshadowed by the "big picture" which invariably refers to the R400++ bn Eskom "debt trap" and general financial position. Under the circumstances it is easy to revert to playing the "blame game" and vilify everyone who works for the utility.

BUT,... there are many capable Eskom's employees who are doing their best, under difficult circumstances, to minimize the adverse affects and inconvenience of this one obvious result of the position we find ourselves in with rotational load shedding.















To this end they have set up information channels of various sorts to keep the public, and their large utility customers, as up-to-date as is possible under the circumstances, on changes and developments as they happen.

They have also issued informative and useful "Fact Sheets" containing useful and often plain commonsense reminders of steps that we need to take to minimize the inconveniences that arise from time to time. Many readers will already be taking the kind of steps recommended but in case there are some that have escaped attention, here are two samples.....

Eskom

## Fact sheet

### Load shedding checklist Prepare yourself by doing the following

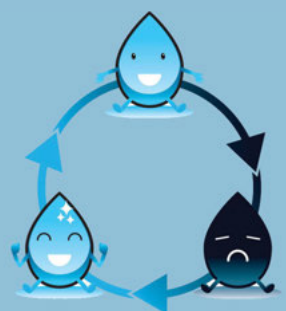
 <p>Keep your <b>cell phone</b> fully <b>charged</b> when the power is on. If your cell phone battery is low, remember that you can use your car charger in your car or power packs.</p>	<p>Remember to <b>switch off your oven</b> if it was on when the power outage started.</p> 	<p>Keep <b>frozen bottled water</b> in your freezer to help <b>keep food cold</b> during a power outage.</p>	<p><b>Access, security and safety</b> always remain a top priority - Know where the manual release lever of your electric garage door opener is located and how to operate it.</p> 
<p>Invest in a small <b>LP gas lamp</b> for good quality lighting over a large area.</p>	<p>Keep boiled water in <b>thermos flasks</b> for hot drinks during a power outage.</p>	<p>Keep a battery-powered <b>torch or candles</b> in a place where it will be easy to find in the dark - make sure you have an extra set of fresh batteries.</p> 	<p>Also keep a <b>key to your house</b> with you if you regularly use the garage as the primary means of entering your home, in case the garage door will not open.</p> 
<p><b>Prepare meals beforehand</b> in case of a power outage.</p> 	<p>Invest in a small <b>LP gas heating ring</b> for essential cooking and to boil water for hot drinks - make sure you have an extra bottle of gas.</p>	<p>Keep a <b>small torch</b> on your bedside table at all times - make sure you have an extra set of fresh <b>batteries.</b></p> 	<p>Most <b>medication</b> that needs <b>refrigeration</b> can be kept in a closed fridge for several hours without spoiling - it is essential that you check with your doctor or pharmacist to be sure about your type of medication.</p> 
<p>Install <b>solar powered</b> security and garden lights.</p> 	<p>Make use of <b>surge protection</b>: Electric surges are one of the biggest causes of damage to equipment during a power outage.</p>	<p>Keep <b>refrigerator and freezer doors closed</b> at all times - a power outage of four hours should not cause food spoilage and a freezer should keep food frozen and safe for at least a day.</p>	<p><b>Back up your data:</b> Make it a priority to save your data offsite, in case of a hard drive crash or unforeseen electrical fault. Online "cloud-based" backups are very convenient and are mostly automated, which means that you have one less thing to worry about.</p> 
<p>Load shedding may result in alarm systems not operating properly therefore <b>check with your insurer</b> if you are covered should you have a break in while the alarm is not powered.</p> 	<p>For more info go to: <a href="http://www.eskom.co.za">www.eskom.co.za</a>   Eskom_SA   eskomsouthafrica   eskom_hld_soc_ltd/  or call 086 00 37566</p>		

## DESALINATION

The reverse osmosis process for the desalination of water uses special membranes to separate the salt and other matter from sea water. New developments using an electro-spray method produces a thinner and smoother membrane, which

has been shown to have potential to improve the effectiveness of the whole separation process. With further development and refinement the material is expected to revolutionise the whole process and economics of obtaining fresh water from the world's oceans.

(An interesting related snippet is that, according to the web-site, close to 50% of all of Israel's drinking water comes from desalination plants ! ED)



## NRS 109: Arc flash hot oil resistant suits

This specification provides guidance to users of electrical systems by referencing various local and international standards and quantifies the level of protection required during specific electrical operations. It also aims to standardize the manufacturing and testing of personal protective equipment for protection against the thermal hazards of an electric arc.

*Electrical faults can occur owing to failed insulation, accidental contact with live systems, circuit-breaker failure and by energizing systems with faulty circuits. An electrical fault could result in an electric arc which would expose authorized persons to extreme arc temperatures and forces and result in molten projectiles and shock waves. Electrical faults and human error cannot be ruled out during electrical operations and it is therefore essential that authorized persons are trained on electrical arc flash hazards and supplied with personal protective clothing/equipment for protection against the possible thermal hazards of an electric arc.*

### **NRS 110: Low voltage power and control cables with copper clad aluminium alloy (CCAA) conductors for theft prevention**

This specification covers the requirements for utility low voltage power and control cables with copper clad aluminium alloy (CCAA) conductors for use in theft deterrent low voltage cable constructions up to 600/1000 V AC.

It covers solid and stranded circular or shaped conductors specified for use in insulated electric power and control cables. These cables are intended for use only up to the point of supply as defined in SANS 10142-1. This specification is not intended to be used for conductors intended for bare earthing applications on cable systems (refer to NRS 102 for earthing applications).

Examples of some of the specific cable types covered in this specification include the following:

1. Single core and multicore control cables with solid class 1 conductors of maximum size 4 mm<sup>2</sup>, compliant with either SANS 1507-2, 1507-3, SANS 1507-4 or SANS 1507-5, (conductors compliant with the requirements of this specification).
2. Single core and multicore power cables with stranded class 2 circular conductors in sizes 2.5 mm<sup>2</sup> to 240 mm<sup>2</sup>, compliant with either SANS 1507-2, SANS 1507-3, SANS 1507-4 or SANS 1507-5 (conductors compliant with the requirements of this specification).
3. Multicore power cables with 2 or more stranded class 2 shaped conductors in sizes 16 mm<sup>2</sup> to 240 mm<sup>2</sup>, compliant with either SANS 1507-3, SANS 1507-4 or SANS 1507-5 (conductors compliant with the requirements of this specification).

### **NRS 099 : Bulk metering units (BMUs) for medium –voltage systems with rated a.c. voltages up to and including 24 kV**

This specification covers the construction, quality, technical and safety requirements for indoor and outdoor three-phase MV bulk metering units (BMU) owned and operated by power utilities for systems with rated a.c. voltages up to and including 24 kV. Outdoor units are non-walk-in ground-level mounted units suitable for use in areas accessible to the public.

*The correct application of a bulk metering unit requires appropriate design of equipment and reticulation systems. Several guides are available to assist the application engineer in*

*this respect. In particular, attention should be paid to fault-current interruption.*

### **NRS 088-1: Duct and direct-buried underground fibre-optic cables**

This part of NRS 088 covers the essential construction, performance and acceptance criteria and test requirements for duct and direct-buried underground optical fibre cables.

### **NRS 069 (GUIDELINES FOR DISTRIBUTION CONNECTION CHARGES FOR LOADS)**

The objective of these guidelines is to standardise on how connection charges for loads are calculated in South Africa, and NRS 069 is referenced in the Distribution Code as an allocation methodology for connection charges. It was accepted by the NRS Mancom in 2018 (an update from the 2004 version).

*The capital costs of electrical networks are recoverable from customers through the tariffs and through connection charges in different degrees, depending on the distributor. This means that some degree of sharing or pooling of common connection charges is included in the tariffs and some costs are recovered outside of the tariff through the connection charges.*

*These guidelines do not prescribe how deep or shallow the connection charge philosophy of each distributor should be (i.e. how much is recovered in the tariff and how much is recovered in the connection charge) but rather recommend how costs are to be allocated to a connection charge before being reduced by the amount recovered in the tariff (the capital allowance).*

*The objectives of these guidelines.*

- To stipulate the principles and standard method of calculating and applying policies for the



recovery of electricity network connection charges to distributors.

- To determine how connection charges should be raised when creating new networks, augmenting existing networks and existing networks.
- To explain the logic and reasons for the method of calculation.
- To influence the policy of the distributors, regarding connection to the grid. It is therefore necessary to determine what objectives should be supported by the actual principles and methodology in the guidelines with respect to its effect on stakeholders. This will guide the principles, methodology and detailed guidelines to be developed.

The objectives for the methodology are :

- Economic efficiency: The tariff and connection charges need to be set in a way that will ensure the effective development of the network and fair charges for connection to and use of the system by customers. Connection charges should therefore incentivise the following behaviour by the customers:
  - a) to take an appropriate supply size;
  - b) to utilise installed capacity to its maximum; and
  - c) to locate their points of delivery in the optimal positions.
- Equity: There must be a fair balance between a deep and shallow connection charge approach so as to equitably share costs between customers, developers and distributors using a combination of consumptive and network availability tariff charges and connection charges to cover network costs. This is to give customers more marginal

cost based pricing signals, which is not possible with tariff charges, because these charges are based on pooling/averaging of costs.

- Simplicity: The value of sophisticated pricing arrangements should be balanced with the cost of administration and customer information.
- Transparency: To provide transparency as to how connection charges are raised through connection charges.

The principles to be applied in formulating strategies for connection charges are:

- Existing customers should not be unfairly/adversely affected in the long term by the new investments associated with connecting a new customer and adding additional capacity to the network
- Network connection charges should be recovered by both the consumptive and network availability tariff and connection charges. The ratio will depend on the methodology and local circumstances.
- Customers will be required to contribute to the existing shared network and new capacity outside of the consumptive and/or network availability tariff to make capacity available.
- Customers who have funded networks through connection charges in full should be refunded a fair share on the connection charge paid by other customers for the use of these assets or where sharing by other customers are increased.
- Where there is sharing of assets, costs should be apportioned on a pro rata basis using capacity or distance (or both), as applicable.
- Distributors will have to administer and calculate

connection charges for all aspects of these guidelines.

- Any connection costs recovered in the tariff should be based on that of a standard supply, and any request above a standard supply should be covered by connection charges.
- A consistent and non-discriminatory approach will be used to calculate connection charges to all customers and developers and between all distributors.
- Developers are required to provide electricity services at least up to the full capacity according to the zoning of the development and to pay the connection charge on this capacity.
- Connection charges should be raised from end-use customers when they exceed the capacity provided by the developer or associated with the zoning.
- Double charging by consumptive and/or network availability tariffs and connection charges must be avoided.
- Assets financed by connection charges will be owned and operated by the distributor.
- Assets financed through connection charges are not for the exclusive use of any one customer and may be used by the distributor to supply other customers. Refunds may apply in such cases.
- The principle of self-build i.e. contestability of installation work dedicated and funded by the customers is supported (i.e. a customer has the right to contest a quote by the distributor and thus use a contractor to do the work).

**Anyone requiring more information on these important matters should contact Jayson Naicker at Tel 011 651 6846.**

## AMEU PAST PRESIDENT TAKES ON A NEW ROLE...

*Sicelo Xulu, Honorary Member and Past President of the AMEU has recently assumed duty as the CEO of the South African Institute of Electrical Engineers. This follows the retirement of Stan Bridgens - also an Honorary Member of the AMEU - who has completed a 12-year stint in that capacity.*

Sicelo started in January 2019 and has a 3 year contract with the Institute. He will manage a staff of some 17 people and report to the 55- member SAIEE Executive team and Council.

This appointment will further strengthen the existing ties with the AMEU as there already is a Memorandum of Understanding in place between the two organizations, and significant mutual co-operation and cross membership.

The SAIEE is a voluntary organization that started life in Johannesburg in 1909 when a small group of electrical engineers felt the need for "getting together" with colleagues in order to discuss common problems relating

to the evolving electrical engineering industry and profession. A scenario not very different from the beginnings of the AMEU, just 6 years later.....

It now has in excess of 6000 members and amongst other initiatives, drives a very strong training /education / professional development program in which over 400 engineers and technicians participated in 2018 alone. AMEU members qualify for discounted rates for the various courses.

In addition, the Institute also has an

active mentorship program in which about 50 post-graduate engineers are being assisted and coached in their actual work-place.

The SAIEE has good working relationships with the various Government bodies and organizations and plays a role in the development of national policies amongst other things.

***Congratulations to Sicelo on his appointment and we look forward to stronger ties between the two bodies in the years ahead. Ed.***



## WIND FARMS AND WILD LIFE !

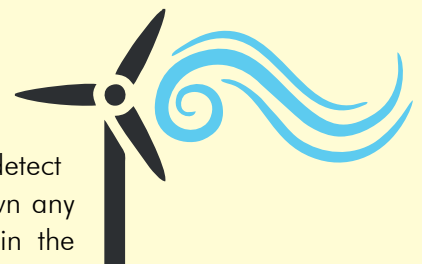
Electrical infrastructure ranging from transmission lines to wind farms and everything in between, always has an effect on the environment and on the wild life that inhabits it. Eskom and other utilities spend vast sums of money to minimise these effects, in particular, the collision of birds with power lines, or their electrocution on poles and towers due to flash-overs.

Readers will be interested to know that new technology will soon be trialled at a Tasmanian (Australia) wind farm – Cattle Hill Wind Farm - to prevent endangered wedge-tailed eagles from being killed by wind turbines.

Sixteen units will be used and the location of the towers

is designed so they will be able to detect eagles and shut down any of the 48 turbines in the project, as necessary. The equipment will identify eagles in the area and work out whether the bird's flight path will collide with a turbine, before shutting the turbine down.

The site is on the eastern shore of Lake Echo, about 100km NW of Hobart in the central part of the island. The combined output will be 150MW and it is at an advanced stage of construction. Commissioning will take place during 2019. It will be the first Australian wind farm to employ the technology.





# METER TESTING AT ITS BEST!

# KoCoS

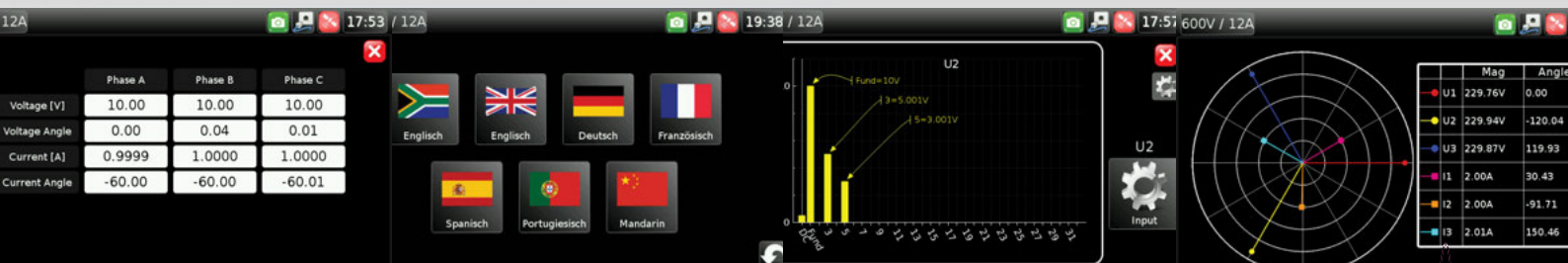


## METES 325

### State-of-the-art, on-site energy meter calibration system!

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## EKURHULENI'S AIRPORT 'SUPER-SUB' IS GROWING....



One of the special VM 132kV isolators in the ACTOM factory.

The construction of two new 60MVA transformer bays to power a large-scale data centre expansion project being undertaken by Teraco Data Environments at their Isando campus, is under way at the City's Airport substation and scheduled for completion in mid-2019.

The R30-million contract to extend this 132/11kV substation was won by ACTOM Power Systems in mid-2018 and one of the key factors in winning the contract was their innovative approach in ensuring that the new transformer bays conform to the existing substation. This is unusual in that it is a compact low-profile design utilising special "vertical-make" (VM) 132kV isolators installed in a staggered formation. These provide busbar support in addition to isolation and earthing functionality.



Cobus Els (second from left), designer of the vertical-make isolators deployed in the Airport "Super Substation", explains some of the isolators' design features to (from left) ACTOM Power Systems' Operations Manager John McClure and ACTOM High Voltage Equipment's Senior Contracts Engineer Leo Timmerman and Operations Manager Nick de Beer.

As the OEM which produced the isolators for the substation no longer exists, the assistance of ACTOM's High Voltage Equipment division was enlisted to undertake the manufacture of identical VM isolators for the new bays.

An extensive search ultimately led them to the OEM's original design engineer, who now runs his own consultancy in Tshwane. He supplied them with the original designs and technical knowhow to enable them to reproduce the isolators. ACTOM Power Systems was able to submit its tender on the basis of remanufacturing the VM isolator to the original specification and in accordance with the previously SABS type-tested design.

Compared with alternative solutions, this approach has the significant further advantage of ensuring that the outage durations and construction complexity of the contract are kept to a minimum.

This is a "self-build" project overseen by Consolidated Power Engineering and subject to approval by Ekurhuleni Metropolitan Municipality.

## TRANSNET

Did you spot the recent news item that announced that Transnet has recently tested the world's longest-yet ore train?

According to the report the train

had 375 ore-carrying wagons and was 4km long!

The previous record was 342 wagons which carried iron ore from Sishen to Saldanha.

The new "monster" is being tested between Hotazel and Saldanha to carry manganese ore, a mineral that is increasingly in demand for steel making, and of which South Africa has large ore deposits.



# HAMBA KAHLE... PASSOP ! GOEDKOOP IS DUUR KOOP !!!!

We've all heard it before, no matter the language .... deep down inside we know that there are often hidden costs when we "buy cheap".... Too many of us have burnt fingers – and much worse – from buying a "bargain" !

In the power sector, getting it wrong by using inferior products and unreliable suppliers can incur massive additional costs, so it's worth stopping and re-thinking before acting.....

As sub-Saharan Africa races to address the power deficit, a growing number of power facilities are being rolled out across the region and as with any boom, a wave of suppliers will enter the market looking to cash in on the growth. Some of them will be fly-by-night companies offering inferior products at bargain basement prices.

Contractors and installers looking to boost their margins should view these suppliers with caution, however. On the face of it, cutting the cost of cable and accessories may appear to be a good way to cut the project costs and win the tender. But in the long term, there are hidden costs associated with partnering with un-trusted suppliers.

For example, should a supplier lack nationwide technical support resources, an installer might lose days on the installation while awaiting

technical back-up from the vendor. If the supplier has insufficient cable and accessories in stock, an installation could be delayed for weeks awaiting an order from overseas.

These delays can impact on the switch-on deadline and cause the contractor to incur high penalties.

If the cables and accessories are sub-standard, system failures a year or two down the line impact the contractor's reputation, the utility's service delivery and the end customer's experience – all of which result in additional costs.

Should the supplier be unable to supply product training for staff, the contractor, utility and local authorities could suffer costly delays and future downtime due to faulty installation.

It has been proven many times that the most cost-effective power installation is the one that rolls out efficiently, on time, and operates reliably for upwards of 30 years. Achieving this depends on a combination of industry-leading cables and accessories and a supplier who does more than just drop off products; but instead actively partners with the contractor in ensuring a successful roll-out.

For more information contact  
Clive Maasch, 021 700 4380;  
clive.maasch@tank.co.za

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(FOOT NOTE; Tank Industries, is a market leader in low and medium voltage cable accessories, and has a proven track record of supplying the South African power sector with TE Connectivity's industry-leading Raychem products, and much more. It is owned by CBI African Cables and is part of the JSE-listed Reunert Group. They field the best niche technical skills and training available in South Africa, and support contractors nationwide with their expert technical support team and multi-million rand in-country stockholdings. ED )



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EVERY CONNECTION COUNTS

# AFFILIATES AFFAIRS...

The new committee recently elected to serve the Affiliates for the 2018-2020 term.



Front row (L to R) Jacqui Burn (Treasurer), Gordon Arons (Chairman), Paddy Padayachee (Vice Chairman), Yolandi Zeelie (Secretary). Back row (L to R) Hannes Roos; Cynthia Badenhurst, Dave Turton and Sam Kogosana (Inset; Nisha Chetty).

Contact details are as follows:

Gordon Arons Beka-Schreder 011 238 0021 082 567 8281	Dave Turton Edgeline 011 680 5492 082 461 4180
Paddy Padayachee Revive Transformers 011 613 1508 082 560 8953	Cynthia Badenhurst vdW 011 061 5000 082 656 9710
Jacqui Burn The Solution Cons. 083 229 9750	Sam Kgosana Aberdare Cables 011 456 4200
Yolandi Zeelie Effecting Change 010 110 0443 084 012 4531	Nisha Chetty Landis & Gyr 012 645 3117
Hannes Roos CPI 011 265 3117 082 469 3933	

The AMEU Affiliates Business Leadership breakfast will be held on 5 September 2019 at the Johannesburg Country Club, Woodmead. Various options for speakers and other related matters are under consideration and more details will be given at a later date.



The first Main Meeting of the Affiliates for 2019 was held on 29th January at a venue provided by CPI (Combined Private Investigations) in their Midrand offices. It was attended by representatives of about 40 member companies. Actual paid up membership was reported to be 177. Among the important matters discussed were the proposed revisions of the day-to-day working rules for the section, and preliminary details of the arrangements for the next AMEU Convention to be held in Cape Town.

The venue will be the Cape Town Convention Centre and it will be held from 13 – 16th October 2019. The concurrent “products and services” exhibition will cater for a layout of 120 3m x 3m stands and companies requiring “large” exhibition space will be limited to a 6-stand allocation. The Affiliates “getting to know you” sports day will cater for golfers, hikers and tenpin-bowlers.

Company representatives were reminded of the AMEU President’s Legacy Awards program in which Affiliate companies will be able to enter in two categories (turnovers >R50m pa or <R50m p.a.). Entry forms are available on the AMEU website. It was noted that one entry has already been received..

Dave Turton reported on arrangements and details pertaining to the various forthcoming Branch meetings around the country. It was also noted that details of the funding assistance that the Affiliates will provide for Branch Meetings has been finalised and the distributions will take place shortly.

## AFFILIATES GOLF DAY

The Affiliates Golf Day will be held at the Glenvista Country Club on 23 May 2019. Cost of four-balls is R4750 including VAT. Companies interested in sponsoring holes as a networking and branding opportunity should contact Jacqui Burn on 083 229 9750.

The booking form is available on the AMEU website.

[www.ameu.co.za](http://www.ameu.co.za)





## Farewell to a long time-member

The meeting bade farewell to a long-time member and active supporter of the Affiliates over the past 40 years, John Williams, who is now retiring. His contribution to the industry was acknowledged by awarding him Hon. Membership of the Affiliates at the recent 2018 Convention.

John started his career in 1956 with South Wales Switchgear in the UK and moved to South Africa with the company in 1966. He continued in the company when it was absorbed into Hawker Siddeley in the 1970's

and retired in 2002 after 46 years of service. John was then asked to join the ACTOM team, and has continued working for a further 16 years !

He and Anne, his wife of 53 years, will now be moving back to the UK to join their children and family and plan to settle in South Wales not all that far from his 1940 birthplace. They leave behind many friends from those 50+ happy years in South Africa.

*On behalf of those many friends numbered amongst our AMEU News readers, we wish you both good*



John Williams

*health and happiness, John. Thank you for your significant contribution to our South African industry and society. Go well, and enjoy your retirement! ED.*

## BRIDGES

Most of our readers will know that the cities of Hong Kong and Macau lie on opposite sides of the mouth/estuary of the Pearl (Zhujiang) River in Southern China. What you may not know is that the river is over 2000km long and drains a basin of some 543 00 sq.km. of the Southern part of the state – about 50% the size of South Africa, but only 4% of China.



The two cities are roughly 40km apart “as the crow flies” and are now connected by a recently commissioned bridge that carries 3 lanes of vehicular traffic in each direction. It has a tunnel section of 6,7km long and the main bridge of 22,9km in length. The project also includes a road link of 12km.

It is the longest man-made sea crossing in the world and is designed for a service life of 120 years, and to withstand a magnitude 8 earthquake and 125km/hr winds. Construction started some 9 years ago and the final cost is expected to be about US\$15bn.

(The Pearly River also boasts a 500kV power line crossing with a span length of 2,3km. The conductors are carried on two 345.5m high towers, the tallest in the world !)

## TRAINS !!!

A recent use of the Gautrain prompted an internet search of the world's high-speed trains...with interesting results...

The Gautrain has a maximum operating speed of 160km/hour and is really a dream for those of us who use it from time to time, whether for the Pretoria / Jo'burg run, or the ORT / Sandton link. What is particularly interesting - and quite an eye-opener ! - is the comparison with other “high speed” international trains.

For a start,... the Gautrain doesn't feature in the top 10 fastest trains, where the slowest is in Taiwan and operates at a relatively sedate 300km/hr.

First prize goes to a Japanese “mag-lev” train operating out of Tokyo at some 580km/hr ! It “floats” on coils embedded in a concrete “roadway” for its entire length. Propulsion power is from coils along the route.

China also has a mag-lev train that runs from Shanghai and operates at about 500km/hr.

France has high-speed wheeled trains operating at 320km/hr, but speeds up to 570km/hr have been recorded, according to information on the website.

## UPDATE ON CABLE THEFT



It is no secret that cable and related infrastructure theft is widespread, worldwide, with South Africa being no exception. Unfortunately, for practical reasons the daily media only report what they consider to be the most “newsworthy” incidents, leaving a mountain of others that are “mundane” and often already in the legal domain and processes.

The following report is an edited version of a presentation recently made to a SARPA branch meeting in Gauteng, and gives eye-opening details of just one organization, CPI’s, successes in bringing these criminals to book... enjoy the read..

*The number of arrests made during the past 16 years - 9361 suspects - averages 585 each year... (getting up to 2 EVERY day !)... These flow from the company’s services rendered to some 24 different organisations including 8 different Local Authorities, 4 para-statal and 12 other major industrial and mining organisations.*

*Their successes in combating crime make interesting reading. In the Free State the Brandfort Court sentenced 5 accused to 332 years of imprisonment. In Senekal 11 accused received a combined 1 213 years imprisonment. At Harrismith 6 accused were sent to prison for a combined 975 years and at Kroonstad 1 accused received a 120 year imprisonment sentence.*

*In a case in Allanridge 5 accused were found guilty and sentenced to a combined conviction of 451 years imprisonment.*

*Investigations in the NW Province led to the recovery of 101 tons of material from different premises of a scrap metals company. During November 2018, Midvaal Municipality requested CPI to remove illegal connections within the Sicelo Informal Settlement which resulted in the recovery of 4 tons of Copper Cable and 1 ton of Aluminium Cable.*

*Since 2007 their interventions have reduced crime for City Power – including illegal connections – by 70%, with 298 suspects apprehended. The first year of their operations in Ekurhuleni resulted in a reduction of crime by 60% with 1707 suspects apprehended.*

*In eThekweni similar success have been achieved with the closing of 2 scrap metal dealers, and 32 suspects apprehended, and dramatic reductions in illegal connections.*

*CPI has also managed to successfully apprehend a total of 4065 suspects during the 16 years they have worked for Eskom and recovered in excess of R8m of stolen material.*

*They have also provided training to PRASA Members along with integral role players during June and July 2018, and this has led to an increase of on average 10 non-CPI arrests, every month thereafter..*

*The full presentation makes for interesting and encouraging reading.*

## A NEW DEVELOPMENT YOU MAY HAVE MISSED.....

A Polish-registered company “Saule Technologies” is now developing a new generation of photo-voltaic material that promises to revolutionise the way electricity is produced in conventional buildings... The material “Perovskite”, originally discovered in the Ural Mountains in 1839, has a chemical composition

“calcium titanate”. It has PV capabilities and can be “sprayed” onto the sub-state material using a type of ink-jet process. It does not require direct sunlight for the PV process to function. When applied to glass it is relatively translucent and the resulting panels are suitable for cladding of buildings.

Conversion efficiencies of the order

of 15% are currently being measured and the company believes that researchers will raise this into the 20% range (similar to silica) in the near future.

A production line is currently under construction and should be ready to supply one square meter sized panels on a commercial basis very soon.



# A HOLIDAY IN ICELAND

In our November 2018 newsletter (No.96) we published an interesting story about the generation of electricity in Iceland using steam raised by using volcanic/geo-thermal sources. This came about because a Past President of the AMEU, Peter Fowles, and his wife Marilyn - now resident in Florida, USA - had been on a family holiday to that remote island-nation. Here are a few highlights from their trip.....

He writes....

"The news from our globe-trotting children that the destination for our 2018 family holiday would be Iceland was received by Marilyn and me with a significant amount of disbelief and a fair amount of trepidation..... Who in their right mind would want to travel to a destination resting on the edge of the Arctic Circle?"

Iceland is at the juncture of the North Atlantic and Arctic Oceans and some 1479km from Norway and 940km from the northern tip of Scotland. The total population is approximately 350 000 with some 67% of those living in the Reykjavík area..

## Here are some of the highlights of the visit.....



**Geyser Strokkur**



**Reynisfjara Black Sands**, a beach with its enormous basalt stacks.



**Kerid Crater Lake**, surrounded by red volcanic rock some 55m deep and 270m across.



**Gullfoss Falls**, a two-tiered waterfall more than 30m high that hurls icy water from the river Hvítá.



**Seljalandsfoss** waterfalls where one can walk behind the falls (getting rather wet in the process).



**Jökulsárlón Glacier Lagoon** with large chunks of ice that have broken from the surrounding Breiðamerkurjökull Glacier.



**Svínafellsjökull** glacier tongue, part of the great Vatnajökull glacier, one of Europe's largest.



Our itinerary included a  $\pm 1400$ km counter clockwise route around Iceland with two-night stops in each of five towns, with deviations along the way to visit a number of attractions..

Peter continues.....

Our group of seven departed from Ft. Lauderdale, Florida, on 26 May 2018 arriving at Keflavik Airport in Reykjavík, at 9:30 on Sunday morning to freezing weather with a sleet-type rain. The plan had included the day at a geothermal spa, and we could not have chosen a better place to start the holiday. The water was comfortably warm to hot, albeit with a strong sulphur smell. We also enjoyed drinks at a 'water-pub', as well as silica mud masks.



# more highlights of the visit.....



**Skogafoss** waterfalls, The hike to the top is equivalent to climbing 34 stories of a building!



**Mývatn Nature Baths** with a geothermal water temperature of between 36 and 40°C.



The old town of **Akureyki**.



**Hvítserkur** Rock Formation, the Troll of North-West Iceland, a spectacular 15 metre high sea-stack.



Along the way up the west coast of Iceland toward the town of **Egillstadir**.



The fishing village of **Stykkishólmur**, an important trading post early in Iceland's history.



**Krafla Viti** crater, part of the Krafla volcanic system, a 60km<sup>2</sup> lava field formed after eruptions in the early 1970's



The 25 odd km drive to **Seydisfjörður** over a snow capped pass and down a long winding road.

## Peter writes.....

The Icelanders are extremely friendly and nice people and very well educated. Education is free and we were told that all young Icelanders are encouraged to obtain a university degree. Their command of the English language, which they begin learning at the age of six, is exceptional.

Tourism is encouraged and the life blood of the island. It is however, an extremely expensive country to visit.

Some examples of costs ( approximate ) :

- Diesel fuel - R27 per litre;
- Meals between R330 (\$25) and R810 (\$60 for a 250g fillet steak) each..
- A lobster roll for a lunchtime meal in a Höfn café cost R210 (\$16). Fish is plentiful and very good and often the most reasonably priced meals.
- An average bottle of wine was between R470 (\$35) and R810 (\$60), A 400ml draft beer was generally around R200 (\$15) and one round of drinks, consisting of two draft beers and 3 glasses of red wine at a pub after dinner one night, cost R875.

Police are not very visible as we were told that the crime rate was negligible, but we were warned not to exceed speed limits as if caught, the resulting fines are very high. All the towns and villages in Iceland though, have cute speed warning signs on the entrance and exit roads. The approaching vehicle's speed is indicated and then followed by a red scowling face



if the speed is over the limit. The face changes to a green smiling one if the vehicle is travelling at a speed below the limit.

The Icelandic Christmas period is an intriguing mixture of religious practice and traditional folklore that began in the ninth century, when the first pagan settlers arrived in Iceland. One of the delightful folklore tales we came across is that of the "Yule Lads".

Instead of just getting a visit from Santa Claus on Christmas Eve, Iceland has the 13 Yule Lads (Jólasveinar) who descend from the mountains to wreak mischief in the nights leading up to Jóln (Christmas). Starting on the 12th of December, the Yule Lads come one by one in the night to Icelandic homes, where they leave a little gift in well-behaved children's shoes placed on the windowsills. Naughty kids get a potato! In return, children might leave them some little gifts or snacks, like laufabrauð ("leaf bread"), a thin, crispy flatbread made especially at Christmastime. The legend includes the Lads mother, evil Grýla, the ogress who collects misbehaved children in her large sack and takes them back to her cave to boil and eat them. The bloodthirsty Grýla reputedly never goes hungry at Christmastime. A really lovely story, if you enjoy Christmas traditions.

Overall, the diversity of the scenery, the weather conditions we experienced, the wide variety of restaurants and good food plus the surprisingly good beer, all combined to make our Iceland holiday one we will remember for a very long time. A highly recommended travel destination.



# Medium Voltage Switchgear

Designed for standard applications in the power utilities and industrial sectors



## Safe, Productive, Flexible

The highest standards of operator safety and increased productivity is offered. The switchgear uses a vacuum circuit breaker, an exceedingly proven and widely used technology within the industrial and reticulation sectors.

The standard instrument transformers and open communication protocol relays ensure flexibility of customer's programmes.

## Save on Cost and Time

Easy access to cables and busbars creates a short installation time and less installation costs.

## Highly Compliant

Based on the latest IEC specifications, IEC 62271-200 and complies with verifications tests as specified by this standard.

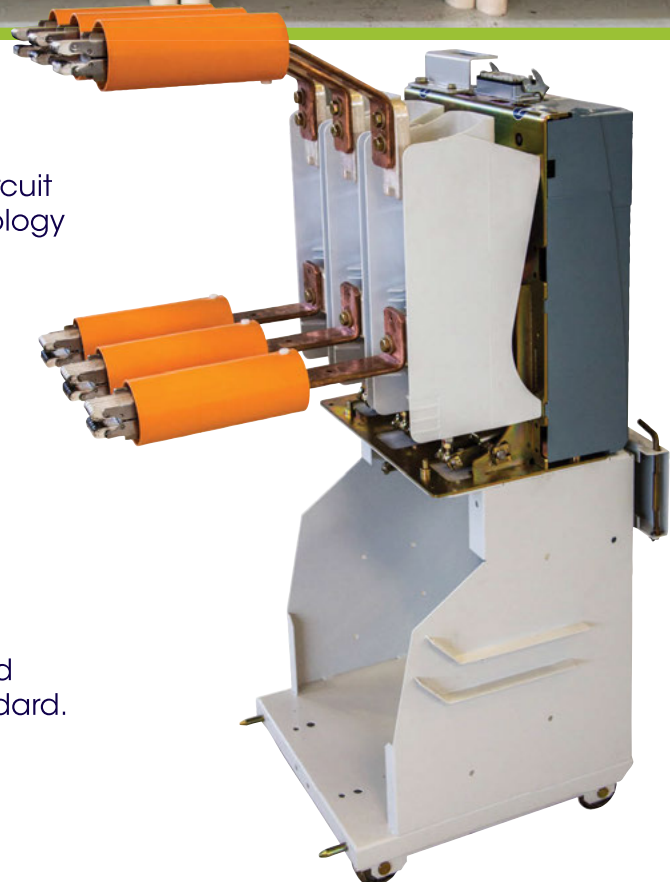
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## LIGHTING AFFAIRS....

It is an understatement to say that many of our AMEU members are involved in the lighting field of our profession. This involvement is mainly because of their responsibilities in the street-lighting section of their respective municipal operations, but many also have responsibilities in decorative lighting and other lighting-related fields.

Not surprisingly there is a significant cross-membership between the AMEU and the principal lighting organisation that look after the interests of this part of our industry, IESSA.

Over the years many AMEU members have served on committees of SANCI, the fore-runner of IESSA, and many have held executive positions in that organisation including occupying the highest office, that of the presidency of SANCI.

For readers not fully aware of the work being done by IESSA it is worth being reminded that besides technical presentations at their various Branch meetings, and their annual Conferences, IESSA have a very active program of lighting-related courses.

Anyone wishing to up-skill themselves or colleagues in this field would be well advised to visit the IESSA website, or simply contact their secretariat / Administrator Lynn Dauncey on 082 727 8666 or [info@iessa.org.za](mailto:info@iessa.org.za) for more information.



## LIST OF SPONSORS

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## DID YOU KNOW ..?

You probably did, but have since forgotten because it's use is not usually "in your face" ..... UV (ultra violet) light is not only useful for "seeing" sometimes invisible things under adverse lighting conditions, like writing and marks on paper and other objects. Importantly it is also highly effective in sterilising the air and in disinfecting working surfaces and packaging areas !

It's use can provide continuous sterilisation and it is often the most effective disinfectant to use immediately prior to final packing of food and other potentially time-degradable products.

UV is invisible to the human eye, yet the technology delivers a continuous, effective, low cost and natural process to disinfecting all forms of pathogens, whether in the air or on surfaces in the processing environment. This increases the shelf life of products.

If you are interested in more general information, or have a need for this type of equipment, or contact Hylton Cowie on 011 621 0620 or email [h.cowie@technilamp.co.za](mailto:h.cowie@technilamp.co.za)

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