AMEU NEWS

THE ASSOCIATION OF MUNICIPAL ELECTRICITY UTILITIES OF SOUTHERN AFRICA

LEADING THE ELECTRICITY DISTRIBUTION INDUSTRY

INSIDE

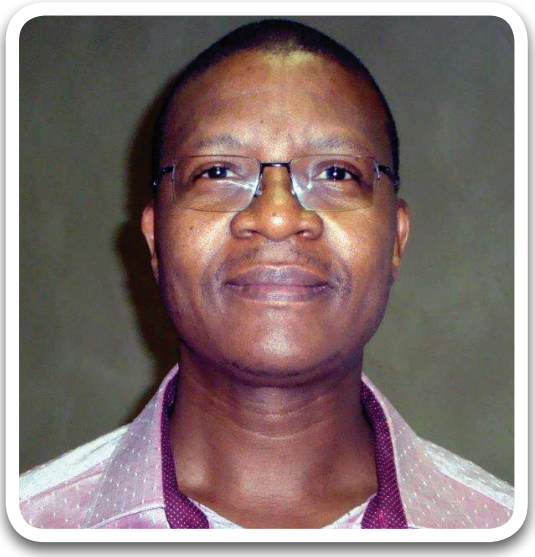
OUR AMEU PRESIDENT'S MESSAGE

"It may be the effect of modern technology in our lives, or perhaps changes in the climate, or some other factor... but one thing is certain and that is that the hectic times in which we live have brought us full circle to being a few short months away from yet another annual AMEU Convention!

My first comment is therefore, if you have not already done so, please set your plans in motion to join us in Tshwane on the 7th October, without further delay. Our arrangements are well under way and you are assured of an interesting learning experience in the formal proceedings and a beneficial few days of interaction with colleagues and friends.

One of the highlights of the meeting will be the induction of only the second lady President in the 103-year history of the Association. Ms Refilwe Mokgosi is a senior executive of Tshwane Electricity and I urge you to give her all the support that you can, in every way possible, for her term of office. I feel sure her leadership will reflect positively on the image of the AMEU.

In passing let me remind you that the first lady to fill this position was Ms Sy Gourrah (2008-10) of East London/ Buffalo City. Although she has moved from municipal employ she is now working in the private sector and is an active representative of one of our Affiliate members.



AMEU President, Tshabi Tshabalala.

As I reflect on the activities of the past two years I would like firstly to thank the Executive, the Secretariat and our various members in all categories, who have played a role in keeping our Association active and relevant, often in very difficult circumstances. It is no secret that many of our utility members have serious staffing problems, most have financial problems and many find these compounded by the ongoing vandalism of cables and equipment and attendant supply disruptions, and of illegal connections.

The Executive have ongoing interactions with State and all other organisations involved in our industry in an effort to address and resolve these various problems. Our Strategic Adviser, Vally Padayachee, is also in regular contact with the involved parties in this regard. As a regular attendee of our various Branch meetings he is providing up-dated information to members on a continuous basis. I urge you to attend the Branch meetings in your area not only to receive and discuss these briefings, but also to provide the necessary feed-back to the Executive on whatever other matters are affecting you and thereby to fulfil a vital part of our Associations activities.

Although my term as President is now coming to an end I would like to assure you all that I will remain active in our Associations affairs and hope to see many of you at the various meetings and functions which all form part of our activities.
God bless you all,
Greetings,

Moferefere (Tshabi) Tshabalala
President

NETWORK NEWS

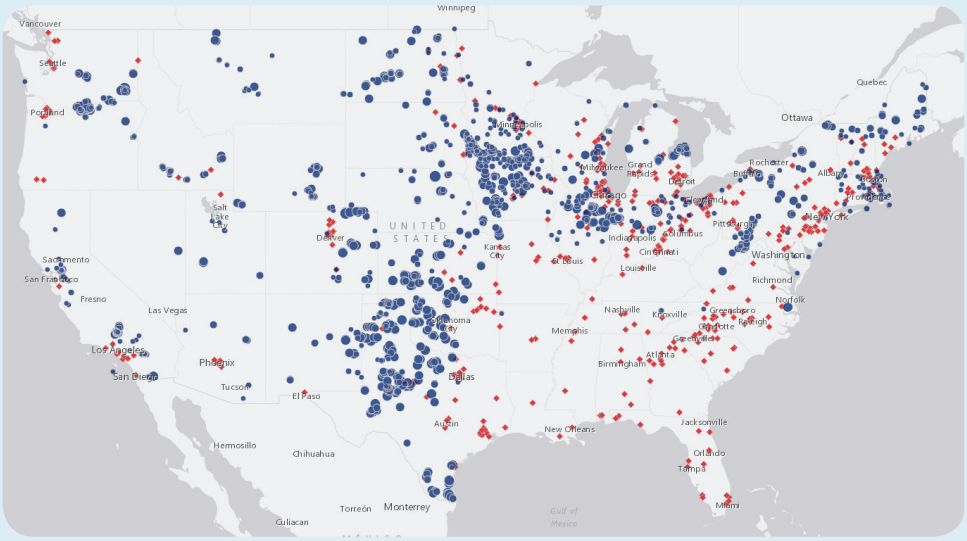
VULTURES

Most of our readers are aware of the on-going efforts by Eskom and other South African Utilities to reduce the impact of our industry on the environment - on wildlife in general and birdlife in particular. According to media reports one vulture per day is killed in South Africa as a result of contact with overhead power lines. A recent news item from Birdlife SA illustrates how seriously this problem is taken in Spain....

"A Spanish court in Albacete confirmed recently that an electricity utility (Iberdrola) should pay a penalty of e26, 000 for the electrocution of 4 griffon vultures in Ossa de Montiel (Albacete) last year. In October 2016 the Spanish Ministry of Agriculture, Environment and Rural Development had fined the company e26,000 because the line "had no mechanism to prevent electrocution."

The company then appealed to the court, which now confirmed the penalty. This is important because it confirms, in the eyes of the Spanish Courts, civil liability for electrocution of wildlife.

Electrocution is one of the major threats affecting vultures worldwide, as it was clearly demonstrated in the Vulture multi-species Action Plan (MsAP), an international action plan covering 15 old world vultures in more than 120 range states. This umbrella new strategy for vultures – natures primary scavengers, providing indispensable ecological services as carrion feeders and disposers of disease-carrying carcasses – was developed by VCF, Birdlife International, and the IUCN Vulture Specialist Group under a contract from the Coordinating Unit of the Raptor MoU, and will be hopefully adopted in the CMS conference of parties this fall. The Vulture MsAP provides several solutions to minimise deaths by electrocution, including legal advocacy towards the type of civil liability now enforced in Spain."



WIND TURBINES

A report from the USA gives the estimated number of "utility scale" (+/- 2 MW to 5 MW) wind turbines currently operating in the States as 50 000. This is expected to rise to 70 000 by 2030.

In another report on the research done to determine the impact of these machines on the environment - in particular birdlife - the authorities have come to the conclusion that 4 birds are killed by accidental collision or other contact, with each turbine, each year. This equates to approximately 200 000 birds killed annually currently, and this is expected to rise to 280 000 by 2030 as more turbines are commissioned.

By the nature of the operations, the research is extremely difficult to carry out and numbers vary widely according to the area, but a mean figure of 4/turbine/year has been considered reasonably accurate. At the same time research has found that in some areas as many as 4 times as many bats are killed as birds!

SNIPPETS...

SMART GRIDS AND CYBER ATTACKS.....

In our June 2017 edition (AMEU News No. 92) we carried a short report on a recently held Dubai *"Smart Grid Security Summit"* which had been attended by AMEU Strategic Adviser, Vally Padayachee. The report quoted one of the presenters, Cyril W Draffin Jnr, a Project Adviser at the MIT Energy Iniative, which included the comment that *"A multi-pronged approach to cyber-security preparedness is required."*

If recent media reports are anything to go by then this problem is REAL, WIDESPREAD and with us NOW...

One report said that numerous oil pipeline operators in the USA had confirmed *"..service disruptions were caused by hacking."* Also, in 2012 and again in 2016 a Saudi oil company was locked down due to hacking. In 2015 and 2016 the Ukraine was affected by blackouts due to a cyber attack.

One security company, Symantec is reported to be tracking some 140 groups of hackers who are actively targeting the energy industry.

The hacking can affect many aspects of our daily services including system technical operations and meter-reading and billing.

The report also claims that Energy Companies are spending less than 0,2% of their revenue on cyber security, considerably less than what financial institutions are spending.

We have been warned.... if you are operating a network, large or small, you would be well advised to re-look at how well your "e" networks are safe from hackers....

WISE WORDS...

'To punish me for my contempt of authority, Fate has made me an authority myself.'
Albert Einstein, 1930.

"The rule of Three; Observe! Remember! Compare!"
Alexander Graham Bell on the "education of the mind" .

NEWS FROM WiE...

Front row (from right): Lomile Modiselle (Vice Chairperson), Punkie Majola (Chair Person) and Yolanda Mabuto (Secretariat).

The AMEU Executive launched the Women in Electricity project at a function in Durban in August 2015.

The objectives were to.....

- Create tangible programs programs designed to groom women in the energy sector.
- To accerate gender transformation.
- To maximise the positive contribution that women can make in the industry.

The implementation plan includes the four pillars;

- Mentorship and Leadership Development
- Partnership and Networking
- International exchange program
- Talent development

In the latest development a WIE meeting was held on the 18 April 2018, where the new committee was elected as follows:
Punkie Majola – Chair Person (City of Ekurhuleni)
Lomile Modiselle – Vice Chair Person (City of Tshwane)
Yolanda Mabuto – Secretariat (Affiliates)

The new committee will be focusing on:

1. Mentorship & Leadership Development
   - Creating a database of mentors.
2. Networking and Partnership
   - Opportunities for Women to be empowered through networking and working together.
3. Talent Development
   - Developing talent for the next generation of Women in Energy.

TECHNOLOGY CHANGING OUR LIVING ...

It is difficult to identify key dates for the "markers" in the many discoveries and developments that encompass "electricity" and its diverse uses...

Depending on your source you may find that Volta developed the first practical electric battery in 1800, or that Davy invented the electric arc light in 1808. And that Bell invented his first telephone in 1876.

Perhaps you'll find that the first street light installation of any significance was in Cleveland, Ohio, in 1879 and that it comprised 21 arc lamps made by Brush.

Or maybe you will find that Marconi demonstrated a radio transmitter in 1894 and that De Forest patented the first "triode" amplifying vacuum tube in 1906. Did you find that Hewitt developed the first practical mercury vapour fluorescent lamp?

Street lights incorporating fluorescent tubes were in vogue in the 1960's and '70's but were soon replaced by luminaires using more efficient "high pressure" mercury lamps.

In 1923 photo-voltaic cells were first discovered and in 1926 Lilienfeld patented a transistor, although it was not until 1947 that the first practical one was developed by scientists Bardeen, Brattain and Shockley.

Light Emitting Diodes (LED's) were being investigated in the early 1960's, but it was not until 1994 that Nakamura made the first white light emitting LED.,,, and for the lighting industry - as the saying goes - the rest is history ! The exponential growth in the use of LED's is breath-taking to say the least, with the technology touching virtually every aspect of the industry, and our lives.

A Johannesburg based company, BEKA Schréder has recently launched a variety of new and exciting high-quality LED luminaires, which have been designed and manufactured in South Africa. One of them is their new LED post top, the KAZELLE.

Its minimalistic and modern look is designed around the compactness of the LED engine, which allows it to blend into the architectural landscapes. At the same time, sustainable lighting solutions are provided that dramatically reduce energy consumption and improve visual comfort for pedestrians, cyclists and motorists.

This cost-effective luminaire is available in either neutral white (4000K) or warm white (3000K) light, and emits a pleasant, glare-free light. Optional control solutions are available, which enables further energy savings.

Reliable, efficient, discreet and vandal resistant, the Kazelle emits no upward lighting. It has been designed for easy installation and, with virtually no maintenance required, it guarantees long-lasting performance and massive savings.
That's technology changing our living... simply turn it on and enjoy your new landscape!

For further information, please contact Nadja Smith at 011 238 0094 or n.smith@beka-schreder.co.za

LEDLUME-MINI XP

Introducing the latest addition to our bestselling LEDlume street light range, the LEDlume-mini XP. It is a high-quality, energy-efficient, versatile and sustainable LED street light.

The LEDlume-mini XP is suitable for functional lighting of Group A4 and Group B roads and other applications where energy saving, low maintenance and precise light control considerations are important factors. This locally designed and manufactured LED luminaire offers an easy technology upgrade (FutureProof) and unsurpassed light uniformity. The LEDlume-mini XP consists of an LED engine, power supply and spigot compartment. This allows the easy installation of the LED engine by means of a hinging action onto a spigot base casting.

The latest LED technology has been utilized to provide the most energy efficient solution. The thermal design has been improved to minimise the Total Cost of Ownership.

FOR MORE INFORMATION:

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BEKA Schréder

BRANCH NEWS Good Hope

The "Homegrown Bakery Cafe" in Ceres was the venue for the Branch's 203rd General Meeting on Friday 11th May, 2018. It was attended by about 90 delegates including representatives from 14 Municipal Utilities and 36 Affiliate and visiting companies.

After the welcoming of delegates by the Chairman, Johan du Plessis, Clr Karriem Adams, Deputy Mayor of Witzenberg, was introduced and addressed the meeting.

The formalities were then completed and a minutes silence was observed in memory of Aubrey Jackson, a well known consulting engineer in Cape Town, who was recently tragically murdered in his home in Cape Town.

The AMEU Strategic Adviser, Vally Padayachee, gave delegates a report back on recent EXCO activities as well as participation in the recent SALGA Energy Summit (see page 9 for details).

continues on page 8

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- 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 / polyethelene / fibre glass or DMC available
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Assemblies manufactured to SABS 1765 for the safety of distribution boards

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

BRANCH NEWS

continues from page 6

His Exco report included an update in membership which now amounts to 104 Utilities and 175 Affiliate companies. Also that "President's Legacy Awards" will be introduced at the 2018 Convention. These will be in recognition of the "Top performing Metro", Top performing Cat. B municipality, Top performing WiE and Top supporting Affiliate.

SARPA's Rens Bindeman also updated delegates on the developments in revenue protection affairs. These included the fact that the Criminal Matters Amendment Act is working well and, delegates were reminded to use the Crime Code 3200 when reporting infrastructure theft cases. The SARPA Convention will be held in the Oakdale Auditorium, Bellville, Cape Town on 23/24th August 2018. (See also page 19 for more SARPA matters.)

The DoLG's representative Leon Eksteen reported that amongst other things funding for "Electricity Master Plans" has been provided for about half of the municipalities and that the others need to apply to the DoLG for their requirements. No funding has been made available, at present, for the training of electricians.

Mhlangabezi Mzalisi from the DoE said that electrification funding allocations for the next 3 years were;

	2018/19	2019/20	2020/21
Mun.	R1904m	R2127m	R2244m
Eskom	R3262m	R3432m	R3621m
Off-Grid	R0,2m	R0,2m	R0,2m

For 2018/19 the planned municipal connections are 91 607 and for Eskom 180 000.

THE TECHNICAL PRESENTATIONS MADE WERE:

ABB's Peter Corbishley outlined *"Communication with Emax 2 Circuit Breaker"*. He explained the Ekip link system and its uses in the supervision of network equipment, and showed a video relating to parts of the equipment.

Gert Hoffman gave details of a new Ring Main unit developed by Siemens and explained various aspects of the equipment, including its technical and safety features and the benefits accruing to users..

"Asset Management and Field Data Capture for Electrical Utilities" was the subject of Optron's Jason Pretorius' talk. He highlighted the reasons for the backlog in the maintenance of utility assets and explained the systems and facilities available to help to resolve the problems.

Sean McCree of ABB Energy in his presentation described *"Best efficiency point pumping"* with specific relevance to the Water and Sanitation industry. Amongst other things he highlighted the importance of variable speed drives and how they can be used to improve the performance and economy of pumping applications.

The next meeting will be held in Malmesbury on 17th August, 2018.

SALGA ENERGY SUMMIT

The dramatic increase in the number of small and medium sized devices for generating renewable energy now readily available in the market place is a fact of life. They are being installed in conventional consumer sites in town and cities, almost on a daily basis. In the first instance their presence raises serious concerns for network operational and safety issues. In the second, and equally important, is the concern relating to their effects on the economics of municipal utilities.

A "new business model" for municipalities is the catch-phrase at the moment... with good reason.

One doesn't need much imagination to think how difficult it will be to meet ongoing commitments if municipalities are faced with a further erosion of their income. Their current debt to Eskom (+/- R30bn) will no doubt pale into insignificance.

The reality is that the ESI is at a cross-roads and various aspects must receive urgent attention.

To this end SALGA (The South African Local Government Association), having taken note of the increasing impact of the various disruptive technologies on municipal finances, convened a special "Energy Summit" for the 7-9 March 2018. It was held in the Sandton Convention Centre and was titled "Defining the Energy Future of Local Government".

It provided a platform for the constructive engagement of stakeholders on a number of topics including international energy-related trends, service delivery, the declining revenue trend and the implications of the energy transition, business and energy sector structure, emerging business opportunities, ...and a number of other related issues.

The program was structured to focus on three key themes namely;
1. Megatrends in the energy sector,
2. Energy economics.
3. Future business models and policy implications.

After three days of presentations and discussions the outcome was summarised in the following five groups which are to receive more detailed attention in the days ahead.

- **ENABLING ENVIRONMENT**

a) Constitutional and legislative clarity
b) Industry structure and market review/ unbundling
c) Redesigned policy framework
d) Funding
e) Tariff determination

- **CUSTOMER CENTRICITY**

a) Cost reflective service
b) Social compact
c) Municipal decision authority
d) Services to the poor
e) Small scale embedded generation

- **OPERATIONAL RESILIENCE**

a) Benchmarking and reliable data
b) Changing business model
c) Revenue realisation
d) Asset management
e) Cost containment

- **NEW OPPORTUNITIES DEPLOYMENT**

a) Renewable energy services
b) Power trading
c) Surcharge energy mini-grids
d) Charging stations for EV
e) Smart and pre-paid meters
f) SSEG, etc...

- **COLLABORATIVE LEADERSHIP**

a) COGTA, DoE, DPE, Fin/NT
b) Eskom and municipalities
c) SMME
d) Municipalities/ Eskom/ decision makers/ NERSA
e) Black industrialists, entrepreneurs, small businesses

AMEU News looks forward to keeping readers updated on further developments.

OVERSPEND ... OUCH !

A news item recently recorded that a report submitted to the Parliamentary Appropriations Committee says – amongst other things - that *"Kusile would overspend by R26.2bn and Medupi by R 26bn."* This prompted a search of the websites for both Medupi and Kusile. It revealed a mine of interesting information on these two projects...

For a start, Medupi will be the world's largest "dry cooling" power station and Kusile will be the first in South Africa to install Flue-Gas Desulphurisation (FGD) – a state-of-the-art technology used to remove oxides of sulphur from exhaust flue gases. The stations have a nominal capacity of 4800MW each.

There are many interesting bits of information on the websites, but finding the figures for costs and completion dates is a bit like looking for needles in the proverbial haystacks...

Almost every source gives different figures. The starting point seems to have been somewhere around R62bn for Medupi and R81bn for Kusile in 2007.

The clearest picture that can be extracted is that, according to estimates in 2014, the cost to completion stood at R154bn for Medupi and R172bn for Kusile.

By 2016 these estimates seem to have risen to R195bn for Medupi and R225bn for Kusile.

Kusile is expected to be complete by 2022.. There are no prizes for right-guessing what the final actual costs will be !

ENERGY STORAGE

The relentless drive to "clean up" the energy sector in general and our electricity industry in particular has resulted in more and more generation equipment being installed that has no inherent storage capacity…. Simplistically, when the sun shines or the wind blows or the tides come in or the water falls ... there is electricity...

Pumped storage projects have been around for so long that we tend to take them for granted, thinking of them – wrongly - as being more for "peak lopping" rather than longer term energy storage.

In our November 2016 (No.90) issue AMEU News carried a short report on a demonstration project on a rail-based system in California that uses "surplus" energy from wind farms to drive an electric train up a hill, where it waits until being run back down 9km of track sending re-generated power into the grid.

Now the UK Government have provided a (UKPound) 650 000 (about R11m) grant to a company GRAVITRICITY to research the use of disused mine shafts for a system of lifting and lowering heavy weights to "store electricity". According to the company's website the relatively high number of disused mine shafts in South Africa are potentially ideal locations for this type of energy storage system.

Current designs point to the use of weights with a mass up to about 3000 tonnes, giving a generating capacity up to 20MW and a conversion efficiency of 80- 90%. It is early days yet, but who knows… we might find a worthwhile use for old mine shafts yet!

Meanwhile, the escalation in the use of portable devices for industrial and domestic use - including cell phones, appliances and tools, and now motor vehicles – has highlighted the need for a very different form of re-chargeable storage devices. Lead-acid batteries have been around for a long time and have served admirably in a number of select areas. *(I vividly recall seeing a battery-powered "milk float/cart" being walked along a London suburban street by a "milk man" delivering his glass-bottled milk as far back as 1951 ! ED)*

Ni-Cad batteries have played an important role over many years, and now the Lithium-ion battery has come into its own because of its particular suitability for use in mobile 'phones and similar small devices.

Ongoing research has now shown that a variation of the Li-ion battery, using titanium in certain components, has some advantages over the original "polymer" version. One advantage is that it's fast charging capability allows it to be re-charged to some 80% of its capacity in about 6 minutes! Any guesses on the next development?

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INDUSTRY TRENDS.....

It is a given that the relentless developments in technology over the years have changed our distribution industry from its original basic model of having a number of distributed loads being fed via a "simple" network of power lines, from one or more generators.

Over time increasingly sophisticated networks developed when "smarter" monitoring, protection and switching equipment became available to utilities. Bigger-and-better went hand in hand with smarter equipment.

Then came the age of digital technologies. The complexities now resulting from these modern developments – such as pre-payment metering systems, remote monitoring and control of individual and network loads, the development of "small" customer-based generators and a host of others - have escalated the urgent need for utilities to embrace smarter technologies to manage all aspects of their processes and businesses.

Such things as the development of AI (artificial intelligence), the impact this has on network automation, the ability to electronically transfer money, the development of "Blockchain" and the need for increasing cyber-security.... the list is endless.... all impact on the daily operations of Utilities. And coming down the track like a run-away locative is the growth in renewable energy and the battery systems inevitable associated with them.

Is there any wonder that SALGA is concerned? (See the article on a page 9.)

We should all be.....

If you would like further insights into these and related developments, and help in managing them in your particular environment, 'phone 011 682 5000 and ask to speak to Christo Myburg, or send an e-mail to christo@uas.co.za.

STS PRE-PAYMENT METERS

In case you missed it..... here is an important notice for all our Engineer members, issued by the STS Association.

CRITICAL NOTICE AFFECTING ALL STS METERS

There is a pending business risk to the prepayment metering industry that requires urgency of action in order to circumvent it.

The token identifiers (TID) used to identify each credit token will run out of available numbers in November 2024, at which point all STS meters will stop accepting credit tokens.

The remedy is to visit each meter and enter a special set of key change tokens in order to reset the meter memory.

Utilities are urged to take the following actions as soon as possible:

1) Update all vending systems to STS Edition 2;
2) Ensure that all point of sale terminals are able to issue STS key change tokens;
3) Determine which meters were certified prior to 2012 and have them retested;
4) Formulate a program, by which the key change tokens can be distributed to each meter. Either by using a dedicated field team or having the consumers enter the tokens;
5) Inform the consumer population as to exactly what they can expect to happen according to the TID Rollover program formulated in 4);
6) As soon as the vending system has been upgraded to STS Edition 2, then instruct meter vendors to code all new meters to base date 2014. These meters will then not be affected by the 2024 TID rollover.

The STS Association has formed a special task team who will be available to assist and guide the users with this program.

Any queries can be directed to Don Taylor on dt@almegatec.co.za.

MORE WIND TURBINE NEWS...

With the recent signing of the various renewable energy purchase agreements by Eskom, and the ongoing developments in the renewable field, the following news item will be of interest to readers...

GE Renewable Energy has launched a project to build the world's largest offshore wind turbine. The company will invest $400 million in the design over the next three-to-five years. and aims to install the first demonstration turbine in Q2 2019 and start commercial shipments of these monster 12 MW from 2021. The Haliade-X is 250 metres tall and has a 220-metre dia. rotor. The blades are 34% longer than that on MHI Vestas' V164-8.0 MW model. The logistics of transporting the blades and support structures for these new machines is such that "port side" factories will be built to carry out much of the manufacturing process.

Meanwhile, the States of Massachusetts and New York are planning to go ahead with leasing vast coastal areas off shore on their Atlantic seaboards for the use of wind turbine farms. The distances off shore are of the order of 10 nautical miles and the ocean depths are around the 60 m depth.

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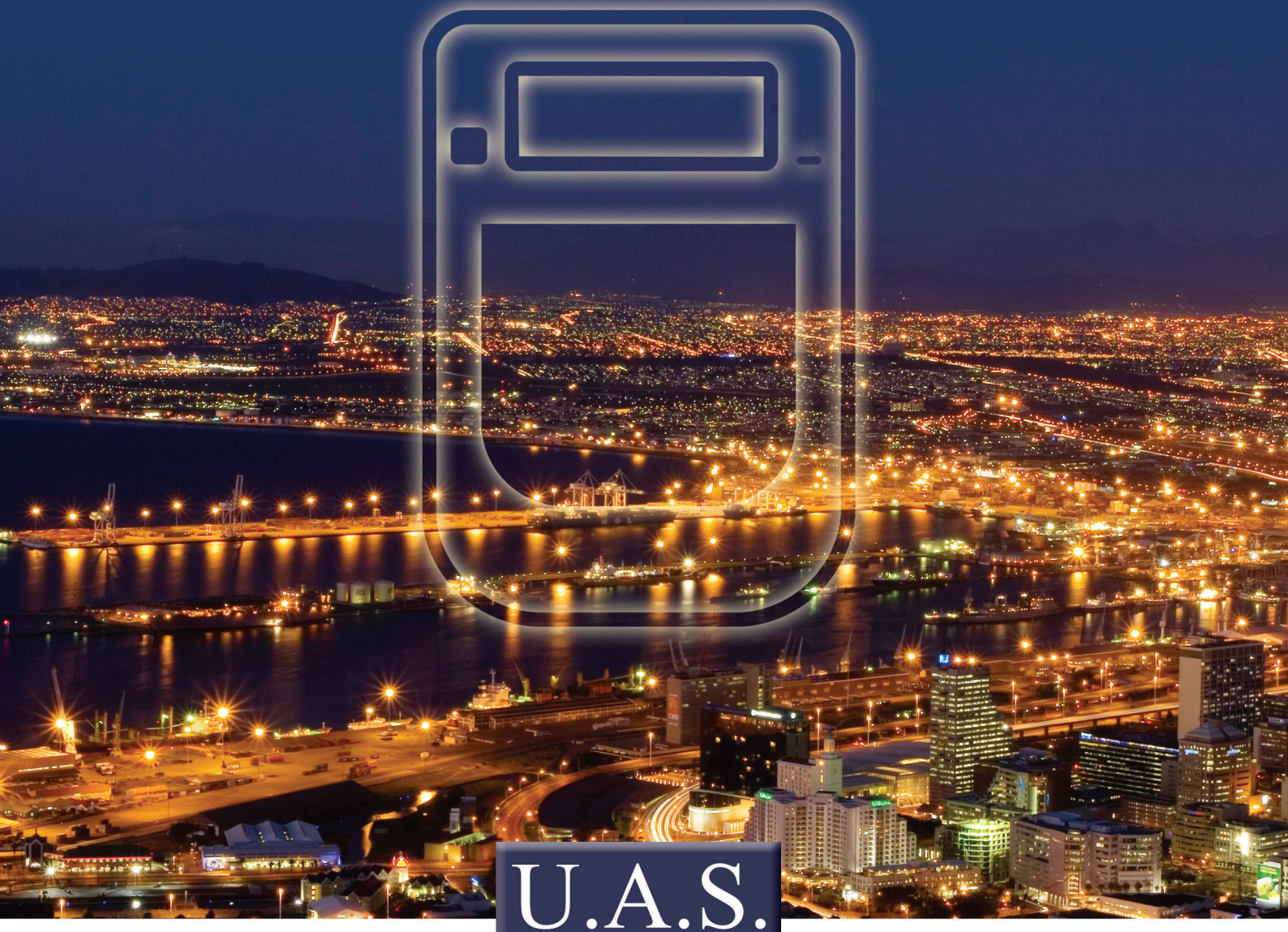

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SAFETY INSIDE

ACTIVITIES UPDATE...

From time to time AMEU News has carried general interest stories featuring some of our well known and active members who have participated in various sporting events. It all started in AMEU News No. 7. Here are a few reminders and updates...


IPPETS•BROKKIES•SNIPPETS• SNIPPETS•BR

AMEU President Al Fortmann may not be a fitness fanatic, but 'fit' he really is, as is evident by his performance in th 1988 Comrades Marathon. Here he completes the 'up run' in 9 hours 50 minutes and 25 seconds with a group o team mates. Congratulations Al!

Gedagtewisseling

Die Uitvoerende Raad wil graag gedagtewisseling ontvang in verband met die uitruiling van tegniese inligting tussen lede.

Die presiese vorm van die uitruiling en die tipe inligting wat oorgedra behoort te word, is nog nie vasgestel nie. 'n Finale besluit sal eers geneem word nadat die behoeftes van lede bekend is.

Bel of skryf direk aan ons Sekretaris, Bennie van der Walt.

Opleiding | Date to

AL

Bearing in mind that AMEU News was only launched in 1987, one of the earliest recorded was in 1988 featuring the late Al Fortmann, a past President of the AMEU (1988/89). Amongst other things Al was a well know rugby referee in his spare time and very fit. He completed the Comrades "up run" from Durban to Pietermaritzburg in 9hrs 50;25.

PIERRE

In 2005 we reported that Pierre van den Heever - at that time in Tzaneen, and now in Ceres - completed his 100th sky-dive ! His wife Tina has decided that Skydiving is a prohibited sport so he has had to seek alternate adrenalin rushes…

He and a colleague have started exploring the beautiful mountains around Ceres.

He writes... *"The photos are of a climb we did in March to 'Oukop' (Ceres peak) just as you enter Ceres. As can be seen the mountains here are very rocky and challenging to climb.*

We were up and down in 8 hours, which included around 1 hour at the top taking in the scenery. Not only is it a very satisfying experience, it is Spiritually uplifting to be so close to nature. Worth every sore muscle…"

JACQUI

Our Affiliates Treasurer, Jacqui Burn, has often featured in our newsletter, and with good reason... She started running about 24 years ago and ran her first Comrades in 1995.

That was the first of 9 Comrades, mixed with 6 Two Oceans, 16 Loskop Ultras, 15 Om die Dam ultras, 21 - 32km "Tough ones" and 11 City to City marathons ...with 13 Strider 32km runs thrown in for good measure.

In 2005, it was climbing Kilimanjaro, in 2008 it was the Paris and London marathons, 2011 the Victoria Falls marathon. This was followed by the Dublin marathon in 2012. To add a little variety to the mix she swam the Midmar mile in 2015, followed in 2017 by a double swim of the Midmar Mile and then the Loch Ness marathon!

All this while earning a living in a full time job – she now runs her own company, **Be The Solution Communications Consultancy** - and doing work for the Affiliates..... she started as their Secretary

And guess what... ARGUS 2018, here she comes !

in 1997/98 and then followed with the Treasurer's job... which she still does with enthusiasm and competence.

Well done Jacqui... we take our collective hats off to you !!!

REFILWE

More recently Refilwe Mokgosi, our incoming AMEU President, has been featured in a number of races. She has been running for about 7 years and completed her

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ACTIVITIES UPDATE...

Continues from page 15

first Comrades and Two Oceans in 2012. ... and now has medals for 7 Comrades and 6 Two Oceans ! Cycling is also part of her life and she is now practicing her swimming with a view to competing in the 2020 Half Iron Man triathlon race !

Her philosophy of life is that "there is time for everything" and that you make time for what's important for your life. She says that planning is crucial and that she basically has a whole year schedule of the races she will do, whether running or cycling. Her work requires her to travel, so she always has her gym bag with her. As member of the Virgin Active gym, she has found that there are always runners with whom she is able to accompany, no matter which town or city she is visiting. She tries to train at least 5 times a week including weekends and trains anytime in the morning or afternoon depending on her work schedule.

SY

And even more recently, Sy Gourrah - another Past President of the AMEU (2008-2010) – has started getting fit...

She writes..

"I have always had numerous excuses why I could not be active and hardly did any exercise. Then I joined Sleekgeek which has a motto of "Eat Clean, Train Dirty". So in 2017, I started walking at the park runs (5 Kms). I was brave enough to do Muddy Princess which is a 5km obstacle race to ultimately the Rookie Warrior which was exciting.

Gradually I graduated to doing my first 10 km race the MiWay Wally Hayward Marathon on the 1 May 2018. On the 19 May I will be "wogging" another 10km at the Race of Hope.

I look up to the veterans such as Jacqui, Refilwe and the Sleekgeeks who inspire me to reach to out to different challenges. What a huge difference the active lifestyle has been in mine and my family's life."

OTHERS?

There are a number of AMEU members and Affiliate members leading active sporting lives... WE WOULD LOVE TO HEAR FROM YOU!!!!!

If you are one of them, please drop me a line at mppc@mweb.co.za ED.

AFFILIATES AFFAIRS

The Affiliates held their regular main meeting on 29th May at Eaton Electrical's works in Wadeville, Germiston. It was attended by 35 company representatives and some of the highlights covered were;

- There are now 144 paid-up Affiliate members of the AMEU. All unpaid member companies have been removed from the list.
- The finances are satisfactory.
- The 2018 golf day will be held on 31st May at the Copper Leaf club and 22 four-balls have entered. Entertainment has been arranged for the prize-giving function.
- The CEO breakfast is scheduled for 7the September at the JCC, Woodmead, and Bruce Whitfield of Prime Media is the speaker.
- PIESA will hold their 2018 conference in November in Lesotu.
- SARPA's 2018 conference will be held in the City of Cape Town's Electricity Department's Head Office Centre on 23rd and 24th August.
- WiE reported that they have reviewed their "Four Pillars" program and will now focus on Mentorship and Leadership and will be using the SAIEE mentorship program as a springboard.
- An MoU with the SAIEE is being looked into to foster closer relations and collaboration.
- Nominations are called for the next committee as the current committee falls away after the AMEU Convention.
- The next meetings are scheduled for 24 July, 11 September and 13 November.

Golf Day

The 2018 AMEU Affiliates Golf Day took place at Copperleaf Golf and Country Estate. Unfortunately the weather did not play ball and only 4 fourballs played the entire 18 holes, the rest of the field managed to finish the first nine.

Jacqui Burn says *"We had got used to the golf day always favouring us with extreme weather and after last year's really great day we thought (incorrectly so) that the weather would be fantastic this year too. The unseasonal rain that came down around 12 noon forced the majority of players off the field to warm up in the bar area and wait for prize giving.*

This year we also decided to have some entertainment for the evening and secured Doc Magic who entertained the players with magic tricks. A really disastrous weather day turned into a fantastic evening!

Our thanks go to the companies that sponsored fourballs and holes. These are as follows in alphabetical order:
Aberdare Cables, Actom Switchgear, ARB Wholesalers, Beka Schreder, Eberhardt Martin, General Electric, Landis & Gyr, Lucy Electric, M-Tec, Plantech/PSW, Revive Transformers, Rocla, Power Matla Innolumis, Power Process Systems, Schneider Electric, Sectional Poles, Tank Industries and T-Good.

Prizes were sponsored by the AMEU Affiliates, Schneider Electric and Power Matla Innolumis (who sponsored nearest to the pin and the longest drive)."

Nearest to the pin was Jaco van der Westhuizen, and Jannie Russouw made the longest drive.

The Winning Team was Jannie Russouw, Ivan van Heerden, Dawie van Niekerk and W van der Westhuizen.

The Magician.

Nearest to the pin winner, Jaco van der Westhuizen.

Longest Drive winner, Jannie Russouw.

The Winning Team was Jannie Russouw, Ivan van Heerden, Dawie van Niekerk and W van der Westhuizen (photo includes Nontu Mkhize, Gordon Arons and Sam Kgosana (only two players of the four-ball were there).

CRIMINAL MATTERS AMENDMENT ACT 18 of 2015

The following press release has been sent out by SARPA ...

REASON FOR ACT

The Criminal Matters Amendment Act 18 of 2015 was designed to recognize the importance of essential infrastructure in providing basic services to the public and also having regard to the unacceptably high incidence of crime relating to essential infrastructure in South Africa, which poses a risk to among others, public safety, electricity supply, communications and transportation.

It also recognizes the harmful consequences to the livelihood, well-being, daily operations and economic activity of the public if basic services cannot be provided due to loss, damage or disruption caused by essential infrastructure-related offences.

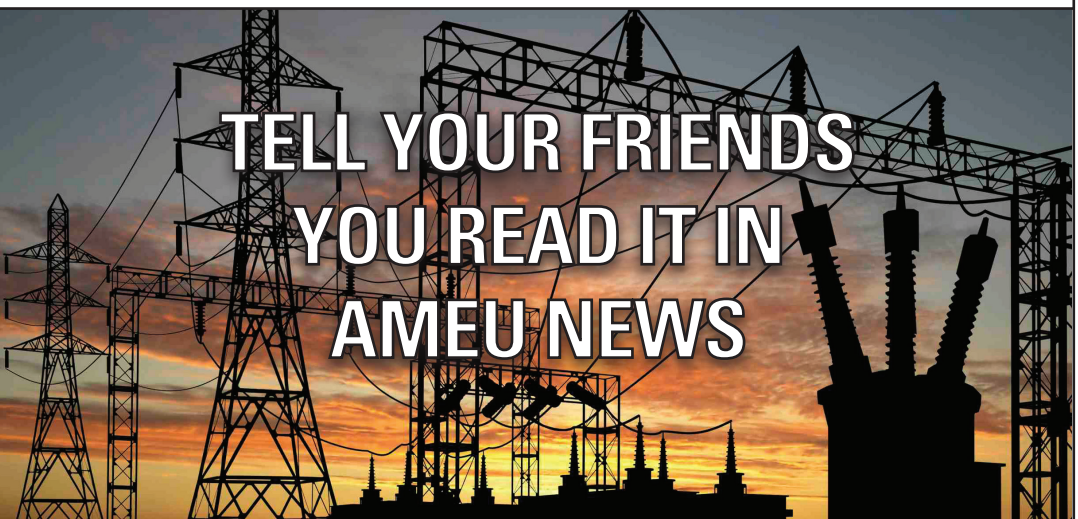
Because essential infrastructure-related offences are becoming increasingly more organized and are often committed by armed criminal groups, such offences on occasion manifest themselves in offences which of themselves relatively minor, but cause considerable damage to essential infrastructure.

MANAGING THE ACT

In order to make the CMA Act effective, both the implementation phase and the process of sensitizing all role players regarding the Act is very crucial. The Deputy Minister of COGTA has formed a Ministerial Task group to monitor such progress. The National Prosecution Authority (NPA) has been tasked to track all such cases and report back to such entity regarding constraints and successes. In order to assist with such processes a new Crime Code was allocated to specifically register such cases at SAPS. This will enable Crime Intelligence to identify the relevant cases and be able to do profiling and reporting on such cases.

REPORTING THE CRIMES

The crime code for essential infrastructure related crimes is 3200. All Service Providers whose essential infrastructure are stolen or vandalized, must report all such cases to the police as soon as possible. The Police Officer taking the complaint should be sensitized to the fact that such crime falls under the Criminal Matters Amendment Act and that it should be registered under crime code 3200. Any refusal by such person to adhere to this request, should be reported to either the Station Commissioner or the FLASH officer at the police station or the SARPA Secretariat or the SARPA Technical Advisor. Please note that the police and the NPA can only take effective steps to manage all issues related to such crimes as and when it is timeously reported and allocated to the correct crime code.



BRANCH NEWS Highveld

A well attended 287th meeting of the branch took place at the Aberdare Cables offices in Isando, Ekurhuleni, on 24th May, 2018. In the absence of the Chairperson Mokgadi Magemba, the Vice-chair - Paul Vermeulen - took the meeting and welcomed all delegates.

Aberdare's Mishac Matla welcomed the visitors to the venue and outlined the company's commitment to local manufacture and amongst other things referred to a production facility in the company's Port Elizabeth factory for EHV cables, expected to go into production by year-end. He introduced the company's safety officer Dave Coutts who addressed delegates on safety issues and presented a company video on their safety policies and procedures.

After completion of the formalities the chairman reported that the office-bearers had recently held a meeting to discuss ways of attracting more municipal representatives – engineers and councilors – to our gatherings and called for suggestions from the delegates. Various suggestions were made and discussed, and it was agreed that the office-bearers would take the matter further for future meetings. In the absence of the AMEU Strategic Adviser, Ekurhuleni's Serutle Ntlatleng led a presentation of the Advisor's latest monthly report to EXCO, and a number of items were highlighted and discussed including the following; the SALGA Energy Summit, The President\s Legacy Project, MISA and the proposed national contracts for equipment, DOE's licensing regulations and developments concerning "wheeling" charges, Eskom's demand stimulation proposals and DOE/ NEAC budget allocations.

The President-elect Refilwe Mokgosi gave a short update on arrangements for the Convention and WiE Chairlady Punkie Majola reported on the work being done by the group's new committee. Gordon Arons, Affiliates Chairman, reported on the upcoming golf day and gave delegates details of arrangements under way for the Convention's exhibition and sporting program.

SARPA's Rens Bindeman reported on recent activities and stated that the Mpumalanga Branch was being resuscitated and would hold a meeting on 14th June.

There was a discussion on the need for Utility representatives to give short presentations at the Branch meetings, amongst other things, in order for the Affiliate representatives to get a better feel for work planned and in progress. This will enable them to report back to companies to assists with their respective forward planning.

The meeting closed after a technical presentation by Schneider Electric's Sahar Javdani on their latest MV protection relays "Easygy P3. Amongst others, this relay includes feeder, motor, and transformer protection functions in the same device and has 9 communication protocols, which greatly simplifies its application.






THE EEDSM PROGRAM...

The Energy Efficiency Demand Side Management (EEDSM) programme is intended to support municipalities in their efforts to reduce electricity consumption by optimising their use of energy. It is managed by the Department of Energy (DoE).

Selected municipalities receive grants for the planning and implementation of energy efficient technologies ranging from traffic and street lighting to energy efficiency in buildings and water service infrastructure, waste water treatment plants and others.

About 30 municipalities currently have a combined total grant allocated of R220m.

Municipalities interested in the EEDSM programme have to respond to the request for proposals issued by DOE in the beginning of October each year. These proposals are evaluated on the basis on their energy savings potential, cost and payback period.

The team managing the EEDSM programme in the DoE is a group of officials based in Pretoria and are supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) through the South African-German Energy Programme (SAGEN).

Please note the requests for proposals for the 2018/2019 financial year is now!

If the DOE approves the request, the municipalities who have been awarded funding have to implement the project by submitting detailed Audit reports, Business Plans as well as Baseline reports.

To participate the municipality has to ensure that Measurement and Verification (M&V) is conducted in line with ISO50010 and that monthly, quarterly and annual reports on programme, and project progress and results are submitted to the DoE.

A local company, BBE Energy, provides full turnkey EEDSM services to municipalities from funding applications to programme implementation, M&V and reporting.

If any municipality is interested in further information or assistance in this important program, contact:
Tobie Nortje
Public Sector Business Unit Manager,
tnortje@bbe.co.za, 079-897-9035.

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THIS AND THAT...

COAL

According to a recent media report South Africa is the 7th largest producer of coal in the world. Our international sales are our largest foreign exchange earner and, some 255 000 persons are directly employed in the industry.

The Richards Bay Coal Terminal website says that it is the third-largest facility of its kind in the world, and that it hopes to set a fresh export record this year (2018) as a R1.3bn equipment replacement programme comes to an end, freeing up storage space and improving efficiency.

In 2017, the terminal notched up a number of records in the volume of coal it received by rail from the inland coalfields in Mpumalanga, and the tonnages loaded on ships for buyers in Asia, Europe and Africa. The terminal handled its best exports yet, 76.47-million tonnes!

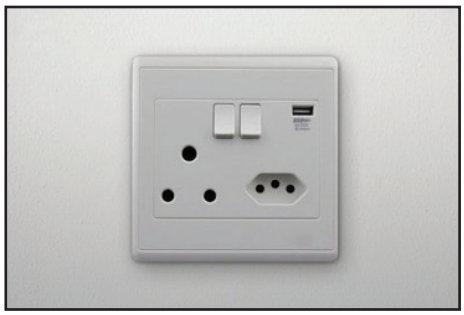
MORE COAL NEWS

The US engineering giant GE Power has recently secured an order for the supply of a 1 050 MW coal fired power plant in Lamu County, Kenya, under a Public Private Partnership ("PPP") framework. The plant will incorporate GE's Ultra Super-Critical technology.

This design keeps raising the efficiency of coal power plants which has now reached 47.5% in the world's most efficient coal power plant located in Germany. GE Power's best in class power generation technology is currently in operation in new generation steam plants like the Manjung 4 in Malaysia, and will be used in future plants including the Hassyan in Dubai.

AT LAST!

Change is inevitable, so we should not be surprised to learn that South Africa has a "new" standard plug and socket outlet design. SANS 164-2 defines the plug/outlet and the SABS has announced that it is now mandatory for new installations. The ZA plug has the same hexagonal profile as the



Europlug commonly seen on cell-phone charges, but it includes an earth pin.

IESSA

Some of our readers may not be familiar with the work being done by our sister organisation IESSA. Not everyone will know about their ongoing initiatives to further educate and train engineers in the many fields of illumination. As with all engineering, illumination is affected by new developments in technology and the drive for more efficient equipment. "Artificial light" is part of our daily lives. "Up skilling" is an imperative for anyone however remotely they are involved in this field. Contact the organisation at (011) 476 4171 or info@iessa.org.za.

ROBBEN ISLAND GOES GREEN...

The 250 people who live and work on Robben Island are now using "green" electricity!

This follows the commissioning of a microgrid project that was part of a sustainable tourism initiative funded by the Department of Tourism.

The system comprises a solar PV farm, a lithium-ion battery storage facility and smart controllers. These ensure a seamless electricity supply and enable the island to run on solar power for a significant portion of the year.

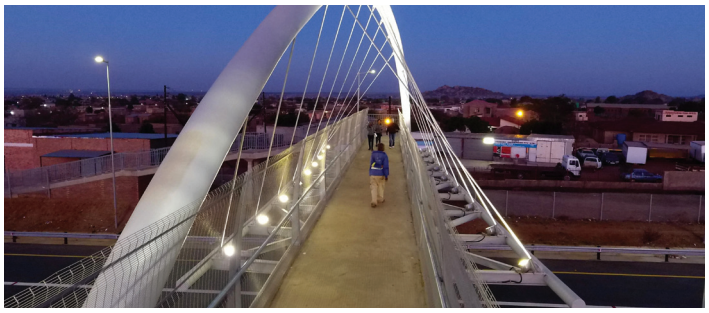
The island uses about two-million kilowatt-hours of electricity annually for residential needs, the harbour and office power requirements, as well as for the desalination plant. The new solar project produces almost one-million kilowatt-hours of electricity a year.

Until now power was supplied by diesel generators, which required around 600,000 litres of fuel a year but which will now serve primarily as a back-up.

The system is equipped with ABB solar inverters and an ABB Ability™ wireless network to provide reliable and secure communications. An operations centre in Cape Town monitors and controls the Microgrid, which eliminates the need to maintain a workforce on the island.

A group of PIESA delegates visited Robben Island on Tuesday, 15 May 2018.

BRIDGES



N1 Bridge North of Polokwane!

SPECTACULAR - The glass-walkway pedestrian bridge in China.

In the March issue of AMEU News we carried a story showing a new bridge across the NI just north of Polokwane...

In our June 2016 (No.89) newsletter we carried a story on the then recently opened glass-walkway pedestrian bridge which spans the Zhangjiajie Gorge in China...

Now, nearer home we have a road bridge(s) that, although not spanning a 430m gorge, is (are) connecting two major highways near Durban and will smooth the flow of 40 000 motor vehicles every day!

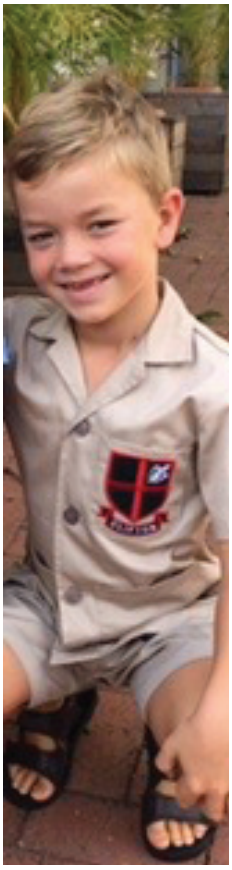
Known as the N2/M41 Mt. Edgecombe/ Umhlanga Interchange, it is an R816m project that has taken 5 years to complete. It is designed as a 4-level system of roads and includes directional ramps without controlled signalling, to ensure a free flow of traffic in all directions.

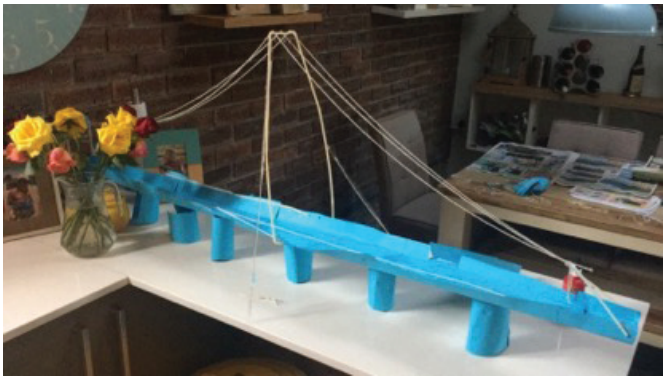
N2/M41 Mount Edgecombe/Umhlanga Interchange.

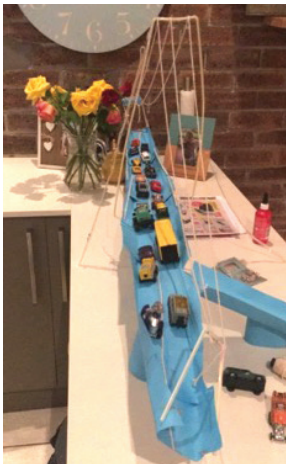
WOW!

Not to be outdone, the 6-year-old grandson of a civil engineer, whose family live in the Durban area, has been inspired to create his own bridge to cater for the vehicles in his toy collection. Made from cardboard, string and glue, this is what he has come up with...

Josh.. the budding Civil engineer..







CHALLENGE

Now for the challenge...
How about a budding Electrical engineer producing a model power station / transmission line / substation...? ED

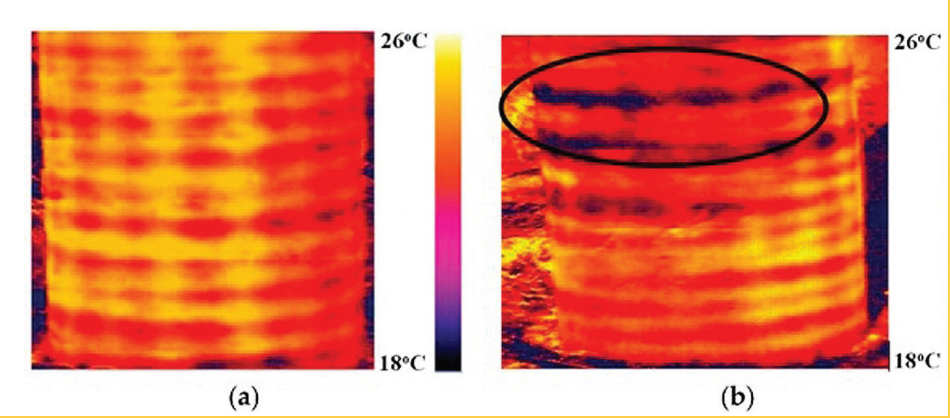
TESTING OF CONCRETE POLES

Reinforced concrete poles have been widely used for supporting power lines of various types in South Africa and most countries around the world for many years.

Like many common objects of this type, the man-in-the-street tends to think they "will last a life time" without giving much thought to the actual period. But, 50 years is the generally accepted service lifespan of these structures. For a variety of reason – including climatic variations - certain poles will need replacement earlier than others and this is largely due to the deterioration of the steel reinforcement in the concrete.

Ultrasonic testing is traditionally used for detecting this deterioration when routine visual inspections identify possible deterioration. This can take up to one day to complete.

A Russian Professor, Vladimir Vavilov, the head of the R&D Laboratory for Thermal Control, has developed a technique using thermal imaging for this purpose. While it is still in its infancy, the technique has proved to be accurate. Their findings show that the technique enables efficient and rapid detection of the corrosion of steel reinforcement hidden behind the concrete shell of the supporting structure. The outcomes of the study were published in Applied Sciences.



The actual test process takes a few minutes but about an hour is required altogether with the preparation works.

A sound pillar (a) and with a defect (b)

"It is enough to test the bottom part of a support with a length of a metre," Professor Vavilov explains. *"The fact is that the metal corrosion is most likely in the place contacting the ground. In places already damaged by corrosion, the reinforcement is thinner, it is otherwise heated, which is displayed on thermograms.."*

For data processing, the developers also apply a unique algorithm, which proved itself in other studies in the field of thermal imaging. The experimental part of the study was carried out at the Trans-Siberian Railway using an experimental facility for conducting induction and infrared thermal imaging.

"We tested 14 working supports. Data obtained from infrared cameras was confirmed through ultrasonic and vibroacoustic tests. Upon the test results, two supports were replaced," said Vavilov.

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