

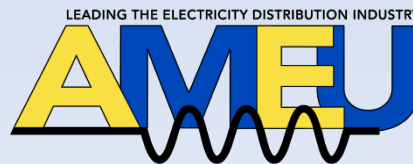


Summary of 2012 63rd AMEU Convention Proceedings



Peter Fowles

17 October 2012





“It is not the strongest of the species that will survive, or the most intelligent, but the ones most responsive to change”

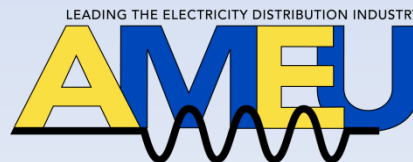
Charles Darwin



New name!!!!



*The Association of Municipal Electricity
Utilities (Southern Africa)*





Affiliates Sports Day

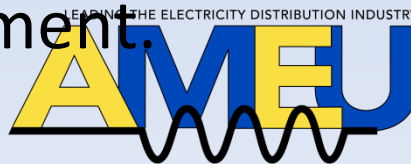
- Golf, bowls and hike
- Much fun
- Sports prize giving – Emperors Casino
- Many thanks to Affiliates





Opening Session

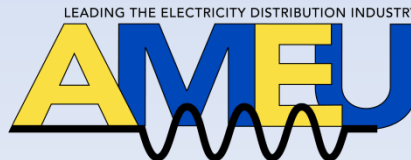
- Scene set by the lovely rendition of our anthem
- Welcome by our President
- Address by Clr Aubrey Nxumalo - Ekurhuleni Metro
 - Proud of his `smart, creative and developmental city: solar project – ORT Cultural Precint
 - `Yes' means `YES' to R650 000 sponsorship
 - “Do not pass loo when over 40”
 - AMEU transformational challenges – Grow membership of countries, strong leadership, political involvement.





Opening Session

- Minister E D Peters, DoE - keynote address
 - Appreciation of long standing relationship - DoE and AMEU
 - Electricity important to enable economic growth
 - EDI restructuring with DoE challenge still with us
 - DoE will implement ADAM – 1st phase rollout to be tested in 10 munics and 2 Metros
 - Not a handout and Munics must take responsibility of investing in own infrastructure
 - New electrification programme – UA by 2025
 - Smart Grid current status – DoE and SANEDI





Opening Session

- Word from the Regulator, Ms P Nzimande
 - Numerous challenges to industry are huge
 - NERSA understands that high expectations on municipalities for service delivery
 - NERSA aims to balance interests of licensees and customers
 - Four major issues
 - Current level of tariffs is not sustainable
 - Diversity of tariffs – harmonization study
 - Shortage of capacity and skills
 - Pressure on munics for acceptance of green energy



Opening Session

- President-Elect, Sicelo Xulu, and Vice President-Elect, Tshabi Tshabalala
- 24th Technical Convention 2013
- Honorary membership Mike Rhode, Paul Johnston, Louis Steyn, Ferdinand Diener, Roy Wienand and Jorge Pereira
- Merit Award – Stephen Delpoort
- Valedictory address by Mike Rhode



Opening Session

- Inauguration of new President, Hannes Roos
- Announcement of new Executive Committee
- Announcement of social contribution to Principal of Khangezile Primary School
- Approved changes to AMEU Constitution



1st Session – Day 1: International Trends

- Jan Gey van Pittius - *Global Trends in Energy, Power & Utilities*
 - Key messages from the global experience
 - Megatrends
 - By 2035, coal and nuclear still major players
 - Renewables continue to grow & even accelerate
 - Energy transformation and smart cities
 - Expansion of ‘smart energy’
 - Electricity flows to become more complex - ‘prosumers’
 - Change the operations and focus of power utilities



1st Session – Day 1: International Trends

- Wajdi Ahmad - Smart grid Evolution through Microgrid Aggregation in Africa
 - Solutions will need to involve PPP
 - Grids not designed to accommodate DG & multi-feed sources
 - Smart Grid is integration of 2 infrastructures – ICT and existing electrical infrastructure.
 - Sustainability is an important & necessary component of a smart grid solution
 - Microgrid discussion - small remote communities



1st Session – Day 1: International Trends

- Paul Renshall - *Innovative Approach to an ICT Infrastructure supporting Smart Grids and Smart Metering for Municipal Electricity Undertakings*
 - Future utilities will rely upon:
 - Greater visibility of network ops and performance
 - Real time information capture, process and analysis
 - Greater automation
 - Not one information technology as a solution
 - “The Cooperative Network” - share telecoms facilities
 - Collaboration between Munics and TSO – U-Telco?



2nd Session – Day 1: New Technology

- James Calmeyer – ZigBee[®] as a Technology Platform for Advanced Metering Infrastructure (AMI)
 - Global wireless language connecting dramatically different devices
 - Self healing & can hop between 16 channels
 - ZigBee alliance controls interoperability & conformance testing specifications – like STS?
 - Benefits and business case
 - ZigBee is a viable last mile communication platform for AMI



2nd Session – Day 1: New Technology

- Hugo Götze - *Mobile Technology for Infield Data Collections and Electronic Works Orders*
 - Software that will change the way we maintain our meters – CASH REGISTERS
 - 4 different modules that is compatible with any `hand held unit`
 - Holistic solution around meters that should improve revenue and reduce maintenance costs – that's *Smart*



2nd Session – Day 1: New Technology

- Dirk Scheerer - *New Innovative Technology for Smart Grids to reduce unnecessary and costly Power Outages*
 - New switching device for MV O/H lines in rural areas to reduce unnecessary outages
 - 80% of faults are temporary
 - FuseSaver – capable of detecting, opening and clearing a fault in half a cycle
 - New technology with a communications module suitable for smart grids



Final Session – Day 1: Renewable Energy

- Andrew Janisch - Small-Scale Renewable Energy
EG: Impacts and opportunities for local municipalities
 - The potential impact of “Double Whammies & Death Spiral”
 - Impact of renewable sources and IBT - LG revenue
 - Cheaper for High End users to generate own or EE
 - Increasing pressure in LG for renewable energy
 - Potential for business model to become unsustainable
 - SEA tool indicates potential 22% loss over 10 years
 - Need to find strategies to address this issue



Final Session – Day 1: Renewable Energy

- Vimeshan Pillay – Simulation Studies Required for Renewable Energy Integration
 - Studies required to integrate renewable energy projects into the SA grid
 - Voltage reactive power requirements
 - Voltage and loading profiles
 - Rapid voltage change
 - Contribution of RE farms to fault levels
 - All should be done and conform to standards (GC) before the project approved



Social Activities – Day 1

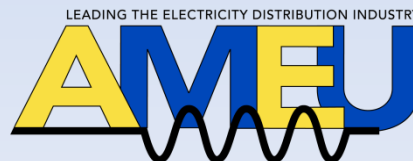
- Ladies treated to a most enjoyable day – thanks to Powertech
 - Carlton Centre Tower
 - Newtown Bus Factory
 - Soweto





Social Activities – Day 1

- Well attended President's Cocktail Party at Emperors Palace in the exhibition area
 - Welcome from Aubrey Nxumalo and Hannes Roos
 - Entertainment and lovely food





1st Session – Day 2: Smart Grids

- Stuart Michie – *Demystifying the Smart Grid*
 - Smart grid involves the integration of the system components to enable management of the power system
 - Requires a ‘system thinking’
 - 4 key areas: Communications/Grid analysis/Dist automation/Integrating new Technology
 - Challenges: Policy & regulation/Tech barriers/customer involvement/skills
 - Not simple:buy equipment for future, set policy and build big picture



1st Session – Day 2: Smart Grids

- Kobus van den Berg - *When is Smart Metering really smart?*
 - SM – normally 1st component of SGs and creates contact with customer
 - SM without TOU tariffs is useless
 - Showed us `SMARTNESS' in areas of revenue management & protection; network management, PQM, maint management, DM
 - CRUX: ***data must be converted to management information***



1st Session – Day 2: Smart Grids

- Harold Hayes - Challenges in implementing Turnkey Smart meter projects
 - What we should do to implement a SM project and make it work
 - Internal preparation is of vital importance to capture the benefits of the new technology
 - Plan, produce policies and procedures , scope
 - Use same energy for customer engagement as industry followed for PPM introduction



1st Session – Day 2: Smart Grids

- Willie de Beer – Technology Deployment as a Smarter EDI Enabler
 - SANEDI looking at policy, standards & deployment of technology for SG in South Africa
 - At stage of significant investment in EDI – now time to make grid more intelligent
 - Must start with a clear Vision – only `smart if convert data into management
 - SG a `broad range of solutions' & evolutionary process



2nd Session – Day 2: Smart Grids

- Wajdi Ahmad - *Smart grid solutions for Transformer Monitoring & Diagnostics*
 - SG solution must address the whole power delivery value chain
 - Low hanging fruit is asset optimisation (monitoring, predict failure, perf management)
 - Transformers large expensive asset – weakest link
 - Health check through DGA – online PAS syetem can deliver savings



2nd Session – Day 2: Smart Grids

- Hendrik Barnard - *TOU tariff for domestic customers with smart meters*
 - SM must be driven by a TOU tariff
 - Requirements & features of a quality TOU tariff for domestic customers – must have ability to respond to economic signals
 - Get rid of IBT
 - Development of TOU for domestic customers is a complex issue



2nd Session – Day 2: Smart Grids

- Tom Phillips - *Building a Real Smart Solution*
 - Different view on a smart grid solution
 - Local context provides a number of unique challenges – majority customer are low income/low consumption
 - Want system simplicity with max cost/benefit
 - Use smart PPM or conventional meters – technology appropriate for our markets



3rd Session – Day 2: Safety Papers

- Deon Louw – Switching Off Dangerous Circuitry ito the OHS Act vs Constraints of Switching Off Services ito PAJA (Public Administrative Justice Act)
 - Dilemma for OHS Act responsible persons
 - Certain actions in case of unsafe situation “rights of persons to be safe
 - PAJA – user must have chance to respond “Consumer has certain rights”
 - Court interdict to switch off supply until remedied
 - Deon believes PAJA allows for immediate action to isolate but not tested in Court



3rd Session – Day 2: Safety Papers

- Barry Gass - *Dangers and Hazards of Entering Live Substations and Enclosures*
 - Many dangers can be avoided if correct action is taken
 - Definitions and proper procedures
 - PPE is a last resort – not the first line of defence
 - “ No substitute for safety”



3rd Session – Day 2: Safety Papers

- Roy Wienand - Isolate, Test and Earth, So Simple, so why do things still go wrong?
 - Chilling example of results of an accident that resulted in a flash injury
 - Number of things went wrong before the accident
 - Conclusions:
 - Labels are critical to avoiding confusion
 - Follow 'Isolate, test and earth' procedures
 - Think about information found (cable fault location distance)
 - Wear PPE



Final Session – Day 2: Safety Papers

- Dennis Mokoala – *Safety: The importance of Labelling/Marking in the Electrical Network*
 - Incorrect (confusing) labelling a cause of industrial accidents
 - Labelling is a legal requirement (EIR –SANS 0142)
 - Neglected during maintenance processes
 - Lessons learned:
 - Labelling should be periodically reviewed/updated
 - All temporary labels to be made permanent



Final Session – Day 2: Safety Papers

- Willem du Toit – Optimising Health and Safety management by job task to risk behaviour profile matching
 - Need to understand risk-taking behaviour and risk mitigation
 - Intervention necessary to avoid incorrect decisions and behaviour
 - Competence = Experience + knowledge
 - Training is the most effective intervention to improve knowledge
 - Match individual risk taking profile with job task risk



Social Activities – Day 2

- Ladies were guests of CBI Electric at a
 - Pamper Day @ Signature Life Aviator Hotel
 - Make up workshop
 - Hand, foot massage and mini facials
 - Colour therapy
 - Empowerment workshop





Social Activities – Day 2

- AMEU Gala Evening hosted by the AMEU President
 - MC – Riaad Moosa
 - Idols- Thembe
 - Lovely venue and food
 - Much fun



1st Session – Day 3: Operations and Planning

- Gareth Stanford - Low Loss Distribution Transformers in a South African Context
 - Losses occurring on transformers high
 - More efficient transformers = real cost savings + increase in effective capacity available
 - Room for improvement in loss specification
 - Capitalisation formula : $TCO = Price + NLL \text{ cost} + LL \text{ cost}$ allows cost benefit analysis as technology improves
 - Review of SANS 780



1st Session – Day 3: Operations and Planning

- Hilton Baartman - Case Study: Protection Settings Management at City Power
 - Implementation of an integrated protection settings management system (psms)
 - Modern numerical relays – increasing amount of functions and more settings
 - Correct settings pivotal to integrity of any power system
 - psms – user friendly web interface requires minimal training



1st Session – Day 3: Operations and Planning

- Clinton Carter-Brown – Network reliability informed approach to prioritising investment for economic sustainability
 - develop an understanding of the financial and economic implications of network infrastructure service levels requirements & potential trade-offs
 - service levels , *cost of achieving these* , *Cost of Un-served Energy*
 - pragmatic approach using readily available network information to determine economic benefit of possible capital investment



1st Session – Day 3: Operations and Planning

- Stephen Delpont - *Power Quality Monitoring (or Management) System (PQMS)*” for the City of *Ekurhuleni*
 - 50 intake points: 132 to 6.6kV: 8000 transformers
 - QOS important for sustainability of utility
 - Ekurhuleni implemented web based PQMS
 - Objective to make PQ data visible to assist in improving system performance for customers
 - Invitation to visit EMM website as `Guest`”



2nd Session – Day 3: Operations and Planning

- Hartmut Bohmer- *Using Low Voltage Smart System (LVSS) Data for Intelligent Operations and Customer Support*
 - Pilot project to establish consumer buy in for smart energy technologies
 - enables more efficient management and control of electricity consumption using real time information
 - Evidence that consumers react to information
 - Informed, involved & empowered consumer required for a sustainable future



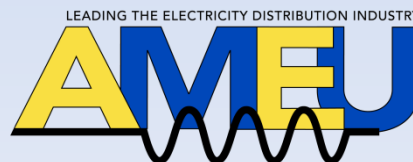
2nd Session – Day 3: Operations and Planning

- Ignatius van Zyl - *The emerging role of mobile phone technology to enhance asset management processes within the municipal sector and its impact on operational efficiency*
 - Need to `Mobilise to Lead`
 - Current munic physical asset management programs paper-based – complex and inaccurate
 - Introduction of PAS 55 – PAM definition
 - Mobile-technology based solutions being widely adopted – number of key drivers (productivity, cost, governance etc)



Social Activities – Day 3

- Gautrain Trip and shopping at Sandton City





Thank you

- Thank you to all the presenters
- Thank you to the Paper Selection Committee
- Thank you to the Affiliates for the Sports Day, sponsorships and Exhibition
- Thank you to the AMEU Secretariat
- Thank you to the team from Ekurhuleni and all who have contributed to an enjoyable and very interesting Convention