



Tuesday, 14 October 2025 - Tutorial Day	
8:30 – 9:00	Registration
9:00 – 9:10	Welcome and Safety - Jana Breedt
9:10 – 10:30	Tutorial 1: Overview of Wholesale Electricity Market in South Africa - Keith Bowen
10:30 – 11:00	Tea/Coffee
11:00 – 12:30	Tutorial 2: Affordable Overhead lines in Sub-Saharan Africa based on WG B2.60 - Vivendhra Naidoo
12:30 – 13:30	Lunch/Exhibition
13:30 – 15:00	Tutorial 3: Digitalising the Energy Transition: The Critical Role of Telecommunications in Integrating Smart Microgrids within the Global Electrical Grid - Kurt Dedekind; Aradhna Pandarum and Thuthukani Biyela
15:00 – 15:30	Tea/Coffee
15:30 – 17:00	Tutorial 4: Research approaches to sustainable power system change in Southern Africa - Prof. Trevor Gaunt
17:00 – 18:30	Welcome Cocktail



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Wednesday, 15 October 2025 - Morning Session		
7:30 – 08:45	Registration - Exhibition Hall	
	Venue: Diamond Room	
8:45 – 9:00	Welcome and Venue Safety - Aradhna Pandarum	
9:00 – 9:15	CIGRE National Committee and International Update - Sidwell Mtetwa	
9:15 – 10:00	Guest Speaker - Celebrating 30 years of the Southern Africa Power Pool - Eng Stephen Dihwa	
10:00 – 10:30	Tea/Coffee/Exhibition	
	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Clinton Carter-Brown	Session Chair: Mashilo Moabelo
10:30	Session 1 - Group 10 (C5) - Electricity Markets - 6 papers	Session 2 - Group 2 (D1) - Materials and emerging test techniques - 5 papers
10:35 – 10:45	#47 The Evolution of the South African Energy Distribution Sector: Towards a Flexible and Enabling Market Architecture Malcolm Van Harte* and Shamir Newalani & U. Heideman	#6 Alcohol Analysis As Degradation Products Of Cellulose Used In Transformers In The Eskom Network, Hlengiwe Nzima*, Joe Van Der Walt And Annalie Lombard
10:45 – 10:55	#70 A Deep Dive into South Africa's Electricity Framework, Amreen Ismail*, Satish Govender and Siju Joseph	#7 Laboratory testing methodology for SF6 alternative insulating gases:A Comprehensive Literature Review Vusumuzi Sibeko *
10:55 – 11:05	#72 Electricity Market Reform in South Africa - Principal Risks, Challenges and Opportunities in the Context of Ancillary Services, Satish Govender*, Amreen Ismail and Siju Joseph	#8 The Identification of Hydrotreated Insulating Transformer Oil and Laboratory Inhibitor Replenishment Study, Kateko Mathe*, Annalie Lombard and Hlengiwe Nzima
11:05 – 11:15	#76 Towards Equitable Tariff Systems In Africa: A Proposed Framework For Energy Sector Reform In The Sustainable Transition Era, Nqobile Gumbi*, Deon Conradie and Bongani Khonjelwayo	#32 A Comparative Study of Machine Learning Algorithms for the Classification of Lightning Impulse Failure Modes, Bafana Nyandeni *
11:15 – 11:25	#103 The role of Market Surveillance(MS) in Competitive Electricity Markets: The Southern African Power Pool (SAPP) experiences, Regulatory Changes: Energy Policy and Regulation. Mziyanda Mbuseli*, Zimirawo Shumba and Bongani Ndlovu	#56 Chemical Compatibility and Behaviour of Ester Oils with Transformer Auxiliary Components. Mariaan Avis *
11:25 – 11:35	#125 Evaluating renewable integration pathways in the Southern Africa Power Pool: Insights from scenario-based modelling, Keith Katyora* and Komla Folly	
11:35 – 12:00	Q & A session	Q & A session
12:00 – 13:00	LUNCH	



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Wednesday, 15 October 2025 - Afternoon Session

	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Popi Njapha	Session Chair: Rob Stephen
13:00	Session 3 - Group 9 (C6) - DER Integration - 6 papers	Session 4 - Group 3 (B2) - Overhead lines - 6 papers
13:05 – 13:15	#31 AI-Driven Web Application for the Evaluation of Renewable Energy Investments: A Case Study of 1MW Solar PV in Durban, <i>Mohammed Muneer Charfaray*</i>	#12 Climate warming changes in lightning activity in South Africa and the impact on transmission infrastructure, <i>Gavin Strelec and Renier van Rooyen *</i>
13:15 – 13:25	#42 Inverter type testing considerations to support the grid code compliance process, <i>Rieghard Vermaak*, Etienne du Preez, Johan Smith and Jacques Wattel</i>	#16 Preventing conductor burn-off due to repeated lightning flashover on overhead electricity distribution lines, <i>Andreas Beutel*, Richardo Davey, Migael Van Zyl and Hendri Geldenhuys</i>
13:25 – 13:35	#44 Grid code requirements for zero-export behind-the-meter power plants, <i>Rieghard Vermaak*, Zoë Lincoln, Etienne du Preez, Johan Smith and Jacques Wattel</i>	#101 Composite Horizontal Post Insulators: Installation Angle Optimisation and the Correct Application of IEC Formulae. <i>Allan Muir* and Roy Macey</i>
13:35 – 13:45	#53 A Modern Approach to Reducing Technical Losses in Renewable Energy Integration: A City Power Case Study. <i>Khethizwe Sihlangu Sukati* and Foster Phetole Moagi</i>	#105 Optimising Distribution and Transmission Networks with Aluminium Conductor Composite Core (ACCC) Technology for greater generation access, <i>Surprise Mmako*, Crescent Mushwana and Aluwani Mutsilanwana</i>
13:45 – 13:55	#58 The Implementation of Utility Incentivised Demand Management: The Eskom Distribution Demand Management Programme Case Study, <i>Sibusiso Tshabalala*, Pradesh Mewalala and Trevor Naicker</i>	#108 Increasing ampacity by utilizing HTLS type 4 conductors, <i>Sajil Bhagirathi*, Riaz Vajeth, Robert Stephen and Kwanele Dladla</i>
13:55 – 14:05	#62 Loss Sensitivities Analysis in DigSILENT PowerFactory for Distribution Networks with Distributed Generation, <i>Given Ndlovu*, Fiona Oloo, Ndoro Netshipale, Ntwanano Nobela, Jaqualene Phasha, Mahlomola Masenkane, Mpeli Rampokanyo, Hector Kgasoane and Lehlolonolo Mashego</i>	#117 Powerline Development in Undermined Areas: A Risk-Based Methodology, <i>Jacob Pienaar, Clinton Carter-Brown, Rishen Moodley, Jacobus Breyll and Sadiki Rasalanavho *</i>
14:05 – 14:30	Q & A session	Q & A session
14:30 – 15:00	Tea/Coffee/Exhibition	
	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Bongwiwe Mtshali	Session Chair: Caroleen Naidoo
15:00	Session 5 - Group 4 (B3/B1/C3) - Substation installations - 5 papers	Session 6 - Group 5 (C3) - Just Energy Transition - 5 papers
15:05 – 15:15	#10 Environmental Impact Analysis of Traditional Concrete Road and Ash-based Concrete Road Construction, <i>Themba Mashiyane* and Gculisile Mvelase</i>	#59 Changes Required for a Sustainable Power System in the Energy Transition in Africa, <i>Pitso Sekhoto *</i>
15:15 – 15:25	#25 Mitigating the Adverse Effects of Cable Theft and Equipment Failures at High-Risk Substations Using an Aggregated Wireless Sensor System, <i>Jesheran Yengopal, Mohamed Fayaz Khan*, Seeralin Nayager and Andrew Swanson</i>	#95 Just Energy Transition: A South African Perspective, <i>Khanyisile Masemola*, David George Dorrell and Cuthbert Nyamupangedengu</i>
15:25 – 15:35	#46 Design of AIS Substations Based on a Mathematical Approach, <i>Abraham Johannes Smit Groenewald* and Mohamed Fayaz Khan</i>	#112 Regulatory models to enact a pan-African just energy transition, <i>Ilaria Gualtieri and Petunia Seele</i>
15:35 – 15:45	#86 Analysis and Design of Suspended Slabs Subject to Increasing Dynamic Forces due to Circuit Breaker Operations at Fordsburg Substation, <i>Azhar Mayet*, Bilal Hajee and Mark Pepper</i>	#118 Digitalizing Operations for Innovation Ecosystems: A Critical Realist MetaTheory for Just Energy Transition Decarbonisation and Climate Change: Just Energy Transition <i>Phatudi Malepe* and Nixon Ochara</i>
15:45 – 15:55	#120 Thermal Monitoring of High Voltage Power Cables for Dynamic Grid Operation, <i>Athabile Lukhele *</i>	#63 Design and energy modelling of selected off-grid microgrids in South Africa using HOMER Pro, <i>Fiona Oloo*, Zenande Nombakuse, Sipho Mdhuli and Mpeli Rampokanyo</i>
15:55 – 16:20	Q & A session	Q & A session
17:30 – 21:00	Gala Dinner and Awards	



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Thursday, 16 October 2025 - Morning Session		
7:30 – 08:45	Registration - Exhibition Hall	
	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Petunia Seele	Session Chair: Chen Baosong
8:45	Session 7 - Group 8 (C1) - Power system economics - 6 papers	Session 8 - Group 7 (D2) - Telecomms and Cybersecurity - 6 papers
8:50 – 9:00	#28 Role of Hydrogen in Renewable Energy Curtailment, <i>Bongani Nyembe* and Jana Breedt</i>	#38 Securing Operational Technology (OT) and Industrial Control Systems (ICS) in the Cloud for Power Generation and Delivery, <i>Kgomotso Manyapetsa, Kholofelo Halefose, Sibusiso Dlamini* and Thuthukani Biyela</i>
9:00 – 9:10	#75 Data Monetisation Opportunities in Energy Utilities, <i>Siyanda Biyela, Lufuno Mulaudzi* and Peter Adigun</i>	#39 Securing Substation Automation Systems Using IEC 62351 and IEC 62443, <i>Mmeli Mthembu *</i>
9:10 – 9:20	#51 Using Smart Meters to Minimise the Impact of Load Shedding on Customers: Eskom Load Limiting Case Study, <i>Edison Makwarela*, Sibusiso Tshabalala, Malcolm Van Harte and Llewellyn Bok</i>	#55 Achieving multi-vendor interoperability in Eskom's smart metering infrastructure, <i>Shawn Papi *</i>
9:20 – 9:30	#34 RVC studies for utility-scale BESS, <i>Alistair Potgieter*, Zoe Lincoln and Zandile Moyo</i>	#77 Enhanced Post-Quantum Cybersecurity Algorithm to Secure Communication in the Operational Technology (OT) systems using Machine Learning, <i>Kholofelo Halefose*, Topside Mathonsi, Kgomotso Manyapetsa and Thuthukani Biyela</i>
9:30 – 9:40	#107 Integrating electrical grid planning and design into utility scale renewable energy project development in South Africa, <i>Thiren Mundie*, Clinton Carter-Brown, Rabagolo Melesi, Kyle Swartz and Muhammad Essop</i>	#85 Enhancing Security in Substations: The Role of an Intrusion Detection Systems (IDS) in Substation Automation Networks, <i>Ronny Lehutso*, Kholofelo Halefose, Kgomotso Manyapetsa, Sipho Sithole and Thuthukani Biyela</i>
9:40 – 9:50	#111 Renewable energy collector grids and their catalytic value in accelerating grid development in South African, <i>Rabagolo Melesi*, Clinton Carter-Brown, Thiren Mundie, Daniel Huck, Najminka Budhoo , M. Graebig and G.Papaefthymiou</i>	#97 The Quest for Five 9s: A Six Sigma Approach to Telecommunications Network Performance Improvement in a Power Utility, <i>Nkosinathi Shongwe*, Kgomotso Setlhapelo, Dennis Ehlers, Wicus van Aswegen, Eric Mohlatlola and Alison Maseko</i>
9:50 – 10:15	Q & A session	Q & A session
10:15 – 10:45	Tea/Coffee/Exhibition	
	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Nomlindo Mngidi	Session Chair: Mark Bruintjies
10:45	Session 9 - Group 6 (B5) - Protection - 5 papers	Session 10 - Group 1 (A1/C6) - Machines - 5 papers
10:50 – 11:00	#26 A New Approach to Verify and Calculate the Earth-Fault Protection Settings in the Transmission Grid, <i>Neo Mapapanyane*</i>	#20 Impact of Improper Battery Management System Design for Lithium-Iron-Phosphate Batteries, <i>Renesh Thakoordeen*, Reuben Mabeo and Thabo Hlalele</i>
11:00 – 11:10	#82 A Novel Deep Sleep Optimizer Algorithm for Earth Fault Protection Coordination in Transmission Networks, <i>Neo Mapapanyane*, Mkhutazi Mditshwa and P.A Van Vuuren</i>	#30 Optimizing Wind Energy Integration through Advanced Forecasting Methods for Improved Power Generation and Storage, <i>Omaira Jajbhay*, Mohamed Fayaz Khan and Andrew Swanson</i>
11:10 – 11:20	#68 Challenges during Power System Simulation Short Circuit Studies using IEC 60909:2016 for Grid-Connected Wind Turbine Generators, <i>Lindokuhle Mbatha*, Kerrylynn Chetty and Parusha Goorbhare-Naidu</i>	#33 Innovative Approaches to Degaussing Generator Rotor Shafts, <i>Amesh Narain Singh *</i>
11:20 – 11:30	#73 Digitization of Physical Layer Devices in Power Plants Incorporating Ethernet to Support Grid Stability & Resilience, <i>Kgomotso Manyapetsa, Sylvester Mhlongo, Mmeli Mthembu, Sipho Sithole* and Mondli Dlamini</i>	#54 Enhancing Generator Reliability through a Data-Driven Health Indicator Dashboard: A Case Study at a South African Power Utility, <i>Sunesh Singh *</i>
11:30 – 11:40	#78 Impact of Faulty Earthing on DCS I/O Modules and Level 0 Devices <i>Sylvester Mhlongo* and Nokuthula Mchunu</i>	#67 Enhancing Shaft Voltage and Current Monitoring in Large Turbo Generators: Challenges, Measurement Techniques, and Mitigation Strategies, <i>Katudi Mailula*, Sandile Moloi and Simon Higgins</i>
11:40 – 12:00	Q & A session	Q & A session
12:00 – 13:00	Women in Energy (WiE) Panel Discussion - A Gender Lens to the Future of Work	
13:00 – 14:00	LUNCH	

Thursday, 16 October 2025 - Afternoon Session

	Venue: Diamond Room	Venue: Ruby Auditorium
	Session Chair: Pamela Ijumba-Kamera	Session Chair: Enderani Naicker
14:00	Session 11 - Group 12 (C2/C4/B4) - Grid Stability and Resilience - 6 papers	Session 12 - Group 11 (C5/C1/C3) - Electricity Value Chains - 6 papers
14:05 – 14:15	#15 Advancing grid stability by developing an energy resilience framework, <i>Lungile Mashele*, George Alex Thopil and Leon Oerlemans</i>	#23 The Role of the DSO in influencing future sector reform and customer behaviour, <i>Shamir Newalani* and Llewellyn Bok</i>
14:15 – 14:25	#36 The impact on the grid stability when integrating solar PV Plants into the South African power system network <i>Nothando Mdletshe* and Sibonakaliso Mzebethshana</i>	#27 Assessment of the interventions required to enable participation of South African SMMEs in renewable energy Global Value Chains, <i>Tshwanelo Rakaibe and Vuyo Mbam*</i>
14:25 – 14:35	#69 Practical experience with sub-synchronous oscillations at wind farms in South Africa, <i>Francois du Plessis*, Males Tomlinson and Johan Beukes</i>	#65 Applying system dynamics to assess the impact of severe temperature variations on electricity infrastructure resilience, <i>Mapule Ntsoane* and Tefo Sekgweleo</i>
14:35 – 14:45	#81 Challenges and insights in the certification of battery energy storage facilities for ancillary services provision <i>Matome Malematja*, Marathon Ntusi and Nkosinomusa Gumedede</i>	#96 Understanding the Amendments to the Electricity Regulation Act given the Experiences at the Southern African Power Pool and the Joburg Fresh Produce Market, <i>Pathmanathan Naidoo*, Simon Connell and Dave Nicolls</i>
14:45 – 14:55	#98 Frequency Stability in Low-inertia Grids: Enhancing Wind Power Plants Participation in Frequency Response, <i>Mkhutazi Mditshwa*, Azeez Olasoji, Emmanuel Okafor, Best Khoza, Komla Folly, and David Oyedokun</i>	#100 Rethink Renewable Energy as Wealth Creator for Public Utility and Customer, <i>Pathmanathan Naidoo *</i>
14:55 – 15:05	#110 Enhancing Grid Resilience Amidst Renewable Energy Variability: Medium Voltage Direct Current (MVDC) technology for Stability and Reliability in South Africa, <i>Petunia Seele*, Javier Iglesias, Frans Dijkhuizen, Britta Buchholz and Nonhlelo Mathunjwa</i>	#116 Assessing Local Industry Capability for Grid Expansion in South Africa, <i>Viroshnee Gounden*, Riaz Vajeth, Namatjabo Tlhatlhetji, Nick Van Der Mescht, Rob Stephen, Thys Bower, Abraham Groenewald, Mohamed Khan, Nishanth Parus, and Leon Naidoo</i>
15:05 – 15:30	Q & A session	Q & A session
15:30 – 15:50	Tea/Coffee/Exhibition	
	Venue: Diamond Room	
15:50 – 16:00	Vote of Thanks - Antony Falconer	
16:00 – 16:10	Awards - Best Paper, Best Student Paper, Best NGN Paper - Khayakazi Dioka	
16:10 – 16:20	Closing Remarks - Sidwell Mtetwa	
	Friday, 17 October 2025 - Tour Day at CSIR/HUAWEI	