

**Wednesday, 25 October 2023 - Day 1**

8:30 – 09:30	Registration Sponsor: CTC Global	
	Venue: Diamond Auditorium	
9:30 – 9:40	Welcome Philip Konig   CIGRE SA Technical Chair	
9:40 – 9:50	CIGRE International Update Presenter: Sidwell Mtetwa   CIGRE SA Chair	
9:50 – 10:20	Opening Address -Renewables in SA – how variable are they really Presenter: Isabel Fick General Manager   System Operator   Eskom, South Africa	
10:20 – 10:30	Q & A session	
10:30 – 11:00	Tea/Coffee/Exhibition	
	Venue: Diamond Auditorium	Venue: Ruby Auditorium
11:00 – 11:05	<b>Session 1 - Grid Resilience (1)</b> Session Chair: Neo Mapapanyane	<b>Session 2 - Social and Environmental Sustainability</b> Session Chair: Jana Breedt
11:05 – 11:15	#13 Critical Clearing Time Computation Automation, <i>Franco de Villiers* and Glenn Jennings</i>	#2 Ash Beneficiation for The Enhancement of Electrical Transmission Infrastructure, <i>Kelley Reynolds-Clausen*, Pheno Mvuyana, Dan Dukhan and Cyril Attwell</i>
11:15 – 11:25	#27 Introduction of the Self-Start Ancillary Service in the South African Power System, <i>Lyle Naidoo*, Amreen Ismail and Siju Joseph</i>	#7 Modifying of expansive clay soils using alkali activated ESKOM dump ash, <i>Pheno Mvuyana*, Kelley Reynolds-Clausen, Cyril Attwell, Dan Dukhan and Theunus Marais</i>
11:25 – 11:35	#33 Review of Strategies for a Zero Probability of a Blackout of the SA National Grid, <i>Pathmanathan Naidoo*, Dave Nicholls, Johan Slabber and Simon Connell</i>	#25 Concept Design of a Solar Charging Station for Retrofitted Electric Buses employed as Intercampus Shuttle, <i>Nicholas Xavier* and Prof Pathmanathan Naidoo</i>
11:35 – 11:45	#44 Eskom's network's resilience against the impact of geomagnetic disturbances – can it survive a solar impact?, <i>Sidwell Mtetwa* and Janine Jagers</i>	#39 Health Risk Effects Associated with 5G signal to the member of the public, <i>Risimati Mavunda*, Kefilwe Thoane, Simon Connell, Carrie Minnaar, Mhoyo-Di-Tamba Willie Vangu, Pathmanathan Naidoo, Dave Nicholls and Kayoda Dada</i>
11:45 – 11:55	#45 Electromagnetic Transients Simulation and Testing Techniques to Ensure Grid Resilience When Integrating Renewable Energy Resources, <i>Bruce Rigby*</i>	#40 The use of modern 3D design tools to optimise the design of transmission lines to meet ICNIRP electric field guidelines economically, <i>Arthur Burger*, Jonathan Chetty, Raeesa Khan and Prashant Mathuradas</i>
11:55 – 12:05	#90 ESCOM Blackstart experience and possible improvements for Grid Resilience, <i>Loud Singara*, Julia Nchilamwela and Crescent Mushwana</i>	#47 The Application of Solar-based Microgrids to Avoid Wildlife Mortality in Kruger National Park, South Africa: The Case Study of Shingwedzi Rest Camp, <i>Monde Soni* and Rudi Kruger</i>
12:05 – 12:30	Q & A session	Q & A session
12:30 – 13:30	Lunch/Exhibition Sponsor: ACTOM	
	Venue: Diamond Auditorium	Venue: Ruby Auditorium
13:30 – 13:35	<b>Session 3 - Energy Security (Value Chain focus) (1)</b> Session Chair: Kurt Dedekind	<b>Session 4 - New Innovations (1)</b> Session Chair: Brandon Peterson
13:35 – 13:45	#14 Battery energy storage systems value chain analysis for the identification of opportunities for enterprise development, <i>Aradhna Pandarum, Tshwanelo Rakaibe*</i>	#8 Importance of using the correct substation earth electrode resistance/impedance measurements method, <i>Theunus Marais*</i>
13:45 – 13:55	#17 Practical comparison between supercapacitors and lithium-ion batteries, <i>Lawrence Siphesihle Basi* and Rudi Nel</i>	#15 Use of Interlocking Paving Blocks as Substation Earthing Surface Material, <i>Andrew Swanson*, Mohammed Khan, Rishen Roopchund, Areno Singh and Theunus Marais</i>
13:55 – 14:05	#18 Certification and Performance Monitoring of Battery Energy Storage Facilities (BESF) for Ancillary Services Provision, <i>Matome Malematja*, Musa Gumede, Marathon Ntusi</i>	#30 Probing technique for the replacement of corroded guy anchor rods, <i>Dan Dukhan*, Jacques Calitz, Paulos Timba and Alicia Simbudayal</i>
14:05 – 14:15	#21 Practical comparison between Na-ion and Li-ion batteries, <i>Rakhi Rampersad and Rudi Nel</i>	#54 Computational analysis on the effects of bundle design parameters on wind induced motion of bundled conductors, <i>Tahir Essa*</i>
14:15 – 14:25	#58 Modernising the Distribution Network with Battery Energy Storage, <i>Thomas Jacobs*</i>	#55 Unmanned aerial vehicle line inspections and other applications, <i>Tahir Essa, Ryan Begg* and Ashlin Naidoo</i>
14:25 – 14:35	#82 The South African Power Cell Concept, <i>Johan Slabber, Jat Du Toit, Wayne Boyes* and Simon Connell</i>	#64 Protection of Medium Voltage Equipment at Repeater High Sites, <i>Mandri van der Mescht*, Willem Dirkse van Schalkwyk and Chandima Gomes</i>
14:35 – 15:00	Q & A session	Q & A session
15:00 – 15:30	Tea/Coffee/Exhibition	
	Venue: Diamond Auditorium	
15:30 – 15:35	<b>Session 5 - Digital Transformation</b> Session Chair: Mohamed Fayaz Khan	
15:35 – 15:45	#6 Connect Digital Substations via a MPLS-TP WAN network: QoS Mapping on a Multiservice platform, <i>Chris Proost*</i>	
15:45 – 15:55	#19 The Journey towards Fully Digitized Substations in Eskom Transmission, <i>Pitso Sekhoto, Kgomoatso Manyapetsa, Ronny Lehutso, Thendo Ramulondi* and Mpumelelo Mathe</i>	
15:55 – 16:05	#20 The Utilization of Authentication, Authorization and Accounting servers in an Operational Technology Environment to enforce accountability, <i>Pitso Sekhoto, Kgomoatso Manyapetsa*, Ronny Lehutso, Thendo Ramulondi and Mpumelelo Mathe</i>	
16:05 – 16:15	#37 A phased migration from TDM to packet transport networks and potential challenges phased by the EPU, <i>Thuthukani Nduzozo Biyela*</i>	
16:15 – 16:25	#65 The Impact of Setting up a Digital Platform within the Organisation, <i>Tefo Sekwelelo, Tshitso Tamane*, Shandukani Vhulondo, Hinesh Madhoo, Tando Figlan, Siyanda Biyela, Peter Adigun, Lloyd Modimogale, Jabulani Bembe, Johan Pienaar</i>	
16:25 – 16:35	#81 Managing and Identifying Bird Guard Installations through the Use of Artificial Intelligence, <i>Renier van Rooyen*, Nishal Mahatho and Oswald van Ginkel</i>	
16:35 – 17:00	Q & A session	
17:00 – 19:00	Gala Cocktail Event Sponsor: Revive Electrical Transformers	

**Thursday, 26 October 2023 - Day 2**

8:00 – 09:00	Registration Sponsor: CTC Global	
	Venue: Diamond Auditorium	Venue: Ruby Auditorium
9:00 – 9:05	<b>Session 6 - Energy Security (Value Chain focus) (2)</b> Session Chair: <b>Queeneth Khumalo</b>	<b>Session 7 - New Innovations (2)</b> Session Chair: <b>Matankiso Mohlokoana</b>
9:05 – 9:15	#9 Electrical protection of electrification networks in the presence of embedded generation, <b>Andreas Beutel*, PJ Burger, Jutas Maudu, Bruce McLaren and Johan Beukes</b>	#3 Fast Frequency Response of Inverter-Based Generation, <b>Warren Farmer*, Johan Beukes and Males Tomlinson</b>
9:15 – 9:25	#11 An objective approach to condition assessment for in service composite insulators using pollution performance curves, <b>Frans Jooste*, Gavin Strelec and Richardo Davey</b>	#10 Synchronous Condensers – Partnering Green Energy, <b>David Tarrant and Steven Mvuyana *</b>
9:25 – 9:35	#51 Powerline Network Geohazards Modelling and Risk assessment using Geospatial Science, <b>Tshisikhawe Mphaphuli*, Nkateko Khoza, Vusi Phiri and Naledzani Mudau</b>	#77 Small Modular Reactor Technology and Deployment Readiness, <b>Derik Wolvaardt*</b>
9:35 – 9:45	#59 Shortcoming of buszone applications in the Eskom Transmission network where a single current transformer on the coupler or section breakers is used, <b>Paul Keller and</b>	#84 A review of Synchrophasor applications for Eskom Transmission, <b>Teboho Machabe*, Itani Phfula and Ken Nixon</b>
9:45 – 9:55	#78 Conditional assessment of composite insulators after long-term field service, <b>Sanjay Narain* and Nishal Mahatho</b>	#86 Design, performance and testing of a converter under General Power Theory control, <b>Pitambar Jankee, Larry Schmidt, Charles Trevor Gaunt, Michel Malengret, Kennedy Litsoane and Rory Yorke *</b>
9:55 – 10:05	#87 Comparison between HVDC conductor corona performance measurements at test cages and test lines and the validation against an operational line under varying environmental conditions, <b>Gavin Strelec*</b>	#91 Multi-level and multi-directional power flows demands variable reactive power compensation: Requirement and operational experience of Variable Shunt Reactor, <b>Ajay Nilakantan* and Kobus De Villiers</b>
10:05 – 10:30	<b>Q &amp; A session</b>	<b>Q &amp; A session</b>
10:30 – 11:00	<b>Tea/Coffee/Exhibition</b>	
	Venue: Diamond Auditorium	Venue: Ruby Auditorium
11:00 – 11:05	<b>Session 8 - Energy Security (Value Chain focus) (3)</b> Session Chair: <b>Musa Gumede</b>	<b>Session 9 - Women in Energy (WiE)</b> Session Chair: <b>Neo Mapapanyane</b>
11:05 – 11:15	#38 A study of sulphur and sulphur containing hydrocarbons in insulating oil used in the South African Power Industry, <b>Annalie Ae Lombard*, Thabang Liphoto, Kateko Mathe</b>	<p><b>The Just Energy Transition: Navigating through the fog – Policy, Finance and Technical Viability</b></p> <p>Presenter: Neo Mapapanyane   CIGRE SA WiE Representative Panellists: Aradhna Pandarum   CIGRE SA WiE Net Zero Initiative Rep Nosipho Bodlingwe   Eskom Caroleen Naidoo   Eskom Vuyolethu Matiwane   BTE Renewables</p>
11:15 – 11:25	#48 Dissolved Gas Analysis (DGA) role in Improving the Reliability of Wind Farm Transformers in Southern Africa, <b>Ian Gray *</b>	
11:25 – 11:35	#53 Failure of Pole-Mount Transformers Shortly after First Energizing, <b>Willem Dirkse van Schalkwyk*, Thabang Motau and Paddy Padayachee</b>	
11:35 – 11:45	#56 Contribution of refurbishment of solar panels to energy security in South Africa, <b>Donah Simiyu*, Tshwanelo Rakaibe and Aradhna Pandarum</b>	
11:45 – 11:55	#63 Evaluation of the Optical Gas Imaging Camera for Turbo Generator Gas Leak Search and Detection using CO2 as a tracer gas, <b>Jabulani Bembe *</b>	
11:55 – 12:05	#79 Optimal Management of Renewable Energy Sources for Industrial Applications, <b>Nelisiwe Mathebula*, Bonginkosi Thango and Daniel Okojie</b>	
12:05 – 12:30	<b>Q &amp; A session</b>	
12:30 – 13:30	<b>Lunch/Exhibition</b> Sponsor: <b>Hitachi Energy South Africa</b>	
	Venue: Diamond Auditorium	
13:30 – 13:35	<b>Session 10 - Grid Resilience (2)</b> Session Chair: <b>Thuthukani Biyela</b>	
13:35 – 13:45	#49 Eskom blackout restoration using Power Application Software and Operator Training Simulator, <b>Stephan Els, Andries Els* and Victory Netshituni</b>	
13:35 – 13:45	#32 Managing power systems in a pandemic or global event, <b>Shaprin Pillay* and Victory Netshituni</b>	
13:45 – 13:55	#34 Unpacking the Primary Energy Resources of the SA National Grid in the Context of Yesterday, Today and Tomorrow, <b>Pathmanathan Naidoo*, Dave Nicholls, Johan Slabber and Simon Connell</b>	
13:45 – 13:55	#35 Issues Relating to Licensing and Liability for Small Modular Reactors in Africa, <b>Dave Nicholls*, Bongani Maqabuka, Simon Connell, Pathmanathan Naidoo and Johan Slabber</b>	
13:55 – 14:05	#62 Improving System Frequency Control in Grids that have a growing presence of Renewable Energy Sources, <b>Yandisa Dilinga *</b>	
14:05 – 14:15	#12 Field Experiences Performing Partial Discharge Measurements on Cast-Resin Dry-Type Power Transformers, <b>Alexander Dierks* and Herman Viljoen</b>	
14:15 – 14:25	#70 Stability assessment of utility-scale solar PV parks employing virtual synchronous generator control in weak grids, <b>Karabo Senyane*, John Van Coller and Lesedi Masisi</b>	
14:25 – 14:35	#1 The development of green hydrogen in South Africa, <b>Aradhna Pandarum *</b>	
14:35 – 15:00	<b>Q &amp; A session</b>	
15:00 – 15:30	<b>Tea/Coffee/Exhibition</b>	
	Venue: Diamond Auditorium	
15:30 – 15:40	<b>Vote of Thanks</b>	
15:40 – 15:50	<b>Awards - Best Paper, Best Student Paper</b> Sponsor: <b>Hyosung South Africa</b>	
15:50 – 16:00	<b>Closing Remarks</b>	