PROGRAM OF EVENTS   23rd August, 2023

This program covers the public sessions available to delegates to the CIGRE Cairns International Symposium 4-7 September 2023. There are many other meetings taking place of Working Groups and Study Committees. Members of these groups will be issued a detailed program.

All delegates will have access to the Symposium presentations as well as the **CIDER** (Conference on the Integration of Distributed Energy Resources and **SEAPAC** (South East Asia Protection and Automation) events.
Delegates are able to move freely between these sessions.

The Symposium brings together delegates and presenters from around the globe and currently includes over 300 Symposium presentations as well as over 20 presentations in both the CIDER and SEAPAC events.

Current Symposium CIDER and SEAPAC paper topics are listed at the back of the program.

Note: Papers are final, however may be subject to change due to travel issues or presenter availability.

LOCATION	SESSION 1 8.30am - 10.00am	Morn. Tea 10.00am- 10.30am	SESSION 2 10.30am - 12.20pm	Lunch 12.20pm- 1.20pm	SESSION 3 1.20pm - 3.10pm	Aft. Tea 3.10pm- 3.40pm	SESSION 4 3.40pm - 5.30pm
Meeting Room M1		A R E N A		A R E N A		A R E N A	**D2 TUTORIAL** Time in Communication Networks, Protection and Control Applications – Time Sources and Distribution Networks ***Presenter:** Antti Viro*
Meeting Room M6 Meeting Room M7			**D1 TUTORIAL** UHF Partial Discharge Detection System for GIS: Application Guide for Sensitivity Verification ***Presenter:** Prof Uwe Schichler*		**WG C2.24 TUTORIAL** Mitigating the Risk of Fire Starts and the Consequences of Fires near Overhead Lines for System Operations ***Presenter:** Frank Crisci*		**WG C2.26 TUTORIAL** Power System Restoration Accounting for a Rapidly Changing Power System and Generation Mix ***Presenter:** Babak Badrzadeh*
Meeting Room M10 Meeting Room M11			**B1 TUTORIAL** Fault Location of Land and Submarine Cables ***Presenter:** Geir Clasen*		**D1 Papers** *Materials and Emerging Test Techniques*		
Plenary Room 1 & 2			**CIDER** *(Conference on the Integration of Distributed Energy Resources)*				
Trinity Room			**C4 Papers** - *Power System Technical Performance*				
Auditorium A					**A3 Papers** - *Transmission and Distribution Equipment*		
Auditorium B & C	**OPENING CEREMONY** *(See below for details on keynote speakers)*		**B5 Papers** - *Protection and Automation*				
Auditorium D					**C5 Papers** - *Electricity Markets and Regulation*		
Arena			**EXHIBITION**				
Mezzanine Exhibition Area	**WELCOME RECEPTION 5.30pm - 7.00pm** *DELEGATES **MUST** WEAR THE ISSUED WRISTBAND TO BE ADMITTED*						

OPENING CEREMONY KEYNOTE SPEAKERS:

Mr David Shankey, *Deputy Director-General of the Energy Division in the Department of Energy and Public Works, Queensland.*
Topic: ***"Renewable Energy Transformation in Queensland"***

Mr Adam Middleton, *Vice President - Western Europe, Siemens Energy*
Topic: ***"Industrialisation of the Energy Transition"***
- How do we make it happen ?

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CAIRNS 2023 INTERNATIONAL SYMPOSIUM

LOCATION	SESSION 1 8.00am - 9.50am	Morn. Tea 9.50am - 10.20am	SESSION 2 10.20am-12.10pm	Lunch 12.10pm - 1.10pm	SESSION 3 1.10pm - 3.00pm	Aft. Tea 3.00pm - 3.30pm	SESSION 4 3.30pm - 5.20pm
Meeting Room M2	**D2 Tutorial** Enabling Teleprotection over Packet Switched Networks *Presenters: James Cole (Evoenergy); Brenton Aardenburg (ElectraNet)*	A R E N A		A R E N A		A R E N A	
Meeting Room M3							
Meeting Room M10					**C4 Workshop** Modelling and Analysis of New and Emerging Forms of System Stability *Presenters: Babak Badrzadeh, Nick Miller, Sachin Goyal, Huajie Gu*		
Meeting Room M11							
Plenary Room 1 & 2	**CIDER** *(Conference on the Integration of Distributed Energy Resources)*						
Trinity Room	**WiE EARLY BREAKFAST 6.45am - 8.30am** *Keynote Speaker: Merryn York* **TICKETED EVENT:** *Attendees must present WiE TICKET to be admitted*				**B1 Papers** *Insulated Cables*		
Auditorium A	**C1 Papers** - *Power System Development and Economics*						
Auditorium B & C	**C4 Papers** - *Power System Technical Performance*				**C5 Papers** - *Electricity Markets and Regulation*		
Auditorium D	**SEAPAC** *(South East Asia Protection and Automation Conference)*						
Arena	**EXHIBITION**						
Exhibition Space	**HAPPY HOUR NETWORKING 5.30pm - 6.30pm** *DELEGATES MUST WEAR THE ISSUED WRISTBAND TO BE ADMITTED*						
Hotel Shangri-la	**NGN NETWORKING EVENING 6:00pm - 7:30pm** *DELEGATES MUST WEAR THE ISSUED WRISTBAND TO BE ADMITTED*						

CIGRE INTERNATIONAL SYMPOSIUM CAIRNS 2023
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WEDNESDAY 6th SEPTEMBER

CIGRE Australia | CAIRNS 2023 INTERNATIONAL SYMPOSIUM

LOCATION	SESSION 1 8.00am - 9.50am	Morn. Tea 9.50am - 10.20am	SESSION 2 10.20am - 12.10pm	Lunch 12.10pm - 1.10pm	SESSION 3 1.10pm - 3.00pm	Aft. Tea 3.00pm - 3.30pm	SESSION 4 3.30pm - 4.30pm
Meeting Room M2	NGN FORUM			A R E N A	NGN PRESENTATIONS		
Meeting Room M3							
Meeting Room M4		A R E N A				A R E N A	
Meeting Room M5							
Plenary Room 1 & 2	**A3 Tutorial** Measurement of Harmonics and Impact of High Frequency Transients on Instrument Transformers *Presenters: Eric Sperling and Zoltan Roman*		**B3 Tutorial_1** Knowledge Transfer of Substation Engineering and Experiences *Presenter: Hugh Cunningham*		**B3 Tutorial_2** Air Insulated Substation Design for Severe Climate Conditions *Presenter: Mark McVey*		
Trinity Room			**C1 Tutorial** The Role of Green Hydrogen in Energy Transition *Presenters: Alexandre Oudalov and Antonio Iliceto*		**C5 Tutorial** Hydrogen Certification *Presenters: Ricardo Gedra and Anant Venkateswaran*		
Auditorium A	**C2 Papers** - *Power System Operation and Control*						
Auditorium B & C	**C4 Papers** - *Power System Technical Performance*						
Auditorium D	**C6 Papers** - *Active Distribution Systems and Distributed Energy Resources*						
Arena	**EXHIBITION**						
Rainforest Retreat	**SOIRÉE 5.15pm - 11.00pm** *ALL ATTENDEES MUST WEAR THE ISSUED WRISTBAND TO BOARD THE COACH*						

THE SOIRÉE

- All attendees **MUST** wear the issued wristband to board the Coach.
- **COACH TRANSFER IS COMPULSORY FOR ALL ATTENDEES** FROM THE **CAIRNS CONVENTION CENTRE** AT **5.15PM FOR A 5.30PM SHARP DEPARTURE**.
- The 20 minute coach trip up the range provides scenic views of Cairns and the hinterland.
- Upon arrival, attendees will disembark and have refreshments available prior to being able to explore Rainforest Reserve.
- Indigenous cultural activities and demonstrations, animal displays and shows will be held at various stations throughout the venue. Food and refreshment stations will be available throughout the venue.
- Attendees will be transported back to the Cairns Convention Centre at the end of the evening **departing at 10.00pm.**

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CIGRE INTERNATIONAL SYMPOSIUM CAIRNS 2023

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THURSDAY 7th SEPTEMBER

CIGRE Australia

CAIRNS 2023 INTERNATIONAL SYMPOSIUM

LOCATION	SESSION 1 8.00am - 9.50am	Morn. Tea 9.50am - 10.20am	SESSION 2 10.20am - 12.10pm	Lunch 12.10pm - 1.10pm	SESSION 3 1.10pm - 3.00pm	Aft. Tea 3.00pm - 3.30pm	SESSION 4 3.30pm - 5.20pm
Meeting Room M6		A R E N A		A R E N A		A R E N A	
Meeting Room M7							
Plenary Room 1 & 2	**B5 Tutorial** Applying Synchrophasor Technology for Protection of the Power System *Chair: Anita Oommen*		**B5 Papers** - *Protection and Automation*				
Auditorium A			**B3 Papers** - *Substations and Electrical Installations*				
Auditorium B & C					**C2 Papers** - *Power System Operation and Control*		
Auditorium D	**D2 Papers** - *Information Systems and Telecommunication*						
Arena	**EXHIBITION**						

FRIDAY 8th SEPTEMBER

SYMPOSIUM TECHNICAL TOURS:

We have organised 8 optional Technical Tours. These are now all SOLD OUT.

Listing of Accepted Papers – Symposium / CIDER / SEAPAC as at 23 August 2023

Note: this listing is based on accept papers. Papers may be updated or authors may not be able to attend and so the paper cannot be guaranteed to be presented at the Symposium. Up to date lists and details will be available to registered delegates via the Symposium APP.

Study Committee A3 – Transmission & Distribution Equipment

Devices for switching, interrupting, or limiting currents including circuit breakers, load switches, re-closers, ring-main units disconnectors, earthing switches and fault current limiters wherever installed. Surge arresters, capacitors, busbar and equipment insulators, instrument transformers, bushings, and all other equipment within the substation not specifically covered under another equipment study committee's scopes.

paper ID	title	submitting_author
1115	CIGRE fourth reliability survey on transmission & distribution equipment	Ito, Hiroki
1138	Operation and Maintenance of High Voltage Disconnectors, Importance of Thermography and Live Substation Methods to Mitigate Asset Risk	Zarb, Clayton
1140	Full-scale comparative testing of helical and concentric shed profiles on HV bushings	JONSSON, LARS
1156	The use of partial discharge monitoring and failure analysis of a 275 kV oil filled current transformer	Ward, Brody
1178	TSO experiences on SF6 issues, its related maintenance strategy and best practices.	Blanchet, guilhem
1214	Effect of the DC Offset Current (Asymmetrical Current) on the Circuit breaker due to switching of the Mechanical Switched Reactor in STATCOM – Case Study	Behara, Siva
1217	Identification of capacitor divider parameters used in CVTs for condition evaluation and future power quality measurement applications	Sperling, Erik
1317	Development of stationary measuring equipment in circuit breaker and highly-developed maintenance	NAKAMURA, Keisuke
1341	Challenges in the Transition to Non-SF6 High Voltage Switchgear in Australia and New Zealand: A User's Perspective	Lopez-Roldan, Jose
1342	Specifying CT requirements for power transformer protection in the initial project stage - A Case Study	Singh, Pallavi
1367	The digitalisation of the Electrical System: new opportunities for a smarter and more accurate measurement infrastructure	Mazza, Paolo

Study Committee B1 – Insulated Cables

AC and DC insulated power cable systems for power transmission, distribution and generation connections on land and in submarine applications. Power cable systems associated with micro- grids and the integration of distributed resources.

paperID	title	submitting_author
1106	Improved Cable Ampacity Calculations by Combining the IEC Standard with the Finite Element Technique	Patrick, Jayson
1130	New pressure monitoring system for 132kV OF cables	Bradley, Rob
1165	Rebounding and learning from a HV Cable Termination Mid-life Crisis	Stapleton, Glenn Michael
1175	Condition based maintenance and replacement of medium voltage XLPE cables in Singapore	Cao, Hongyan
1348	A review of low voltage cable diagnostics to support proactive renewal planning	Cuppen, Andre
1433	Field experience on PD measurement for MV cables using different voltage sources, DAC and sinusoidal VLF	Lee, Dong Churl

Study Committee B3 – Substations & Electrical Installations

The design, construction, maintenance and ongoing management of substations and electrical installation in power stations excluding generators. Serves a broad range of target groups in the Electric Power Industry including the technical, economic, environmental and social aspects of this study area.

paper ID	title	submitting_author
1126	Challenges in implementing comprehensive asset online monitoring solutions	Krieg, Terry
1149	Using Automated Infrared Monitoring to Reduce Substation Maintenance Costs	Harada, Richard
1172	Long-Term Use of Substation Equipment considering Environmental Impacts	Moriguchi, Soichi
1174	BESS Integration to Substations – Electrical Design and Australian Standards Compliance	Costan, Crina-Miana
1180	Estimation of degradation curves for substation equipment using text mining	Kobayashi, Tomohiro
1188	Gas tightness technology for SF6 Gas Insulated Switchgear and application to synthetic air insulated switchgear	Mori, Tsuyoshi
1247	An SF6 Switchgear Network Emissions Model to Inform Strategic Decisions	Lamplough, Evan
1291	Air Cored Reactors Installations in Substations	Costan, Crina-Miana
1320	Development and Implementation of an Asset Information Platform for Substations	Sisic, Senad
1333	New Zealand's new National Seismic Hazard Model (NSHM): implications for the design of substations and electrical equipment	Valencia Restrepo, Doralba
1339	The First MVDC Station Project in Korea	Lee, Minsoo
1343	Mobile substations incorporating HV GIS	Lopez-Roldan, Jose
1366	Sustainable substation solutions	Kruk, Lara
1378	Development of Seismically Strengthened 500kV Air Insulated Disconnector and Practice of Seismic Countermeasures Based on the Experience of a Huge Earthquake	ETO, Atsushi
1382	Application of 3D Technologies in Substation Engineering Works	Stafford, Daniel James

Study Committee B5 – Protection & Automation

Power system protection, substation control and automation, remote control systems and equipment, metering systems and equipment.

paperID	title	submitting_author
1112	Practical experience of maximising Safety, Reliability and Efficiency of rural distribution networks	BORLAND, HUGH
1132	Line Protective Relays Suitable for Systems With a High Penetration of Unconventional Sources – Operating Principles and Field Experience	Kasztenny, Bogdan
1143	Directional Overcurrent Protection Near the Inverter-Based Resources	JAFARI, RAHIM
1147	Functions implemented in fully digital protection automation and control system R#SPACE supporting end-to-end applications	Leitloff, Volker
1157	Interoperability test of IEC 61850 process bus system and establishment of design policy for process bus application system	SAKAI, Shotaro
1185	Use of ML and AI for automated outage prediction and risk management for improved system resilience	Kezunovic, Mladen
1199	Establishing Reliable Time Synchronization for Digital Substations	Steinhauser, Fred
1202	The Need for Simplicity in Arc-Flash Protection Design	Phillips, Kelli
1207	Detection of Open-Circuit Downed Conductor Faults – Problems and Solutions	Chiu, Stephen Wai
1236	Definition of communication function specifications for interoperability and interoperability test results on IEC 61850 station bus system	HAYASHI, Yasuhiro
1243	Fault Analysis of Large-Scale Renewable Energy Only Fed System	Aumuller, Craig
1246	Powerlink's Journey to a Wide-Area Monitoring, Protection, and Control System	Moulds, Daniel
1258	Development of Multi-vendor Protection Relay System Employing PTP with IEC 61850 and Evaluation of Time Synchronization Accuracy for Current Differential Calculation	Yusa, Hiroyuki
1264	Impact of Instrument Transformer secondary connections on Performance of Protection System– Experiences from Indian POWERGRID	YADAV, SANDEEP
1265	Mal-operation of Differential Protection relays in EHV shunt Reactors due to asymmetrical CT Saturation and its prevention using Controlled Switching –Experiences of Indian POWERGRID	YADAV, SANDEEP
1270	Experiences with implementing IP based Metering Solution	chauhan, manu
1271	On-line Equipment Status Monitoring for Reliability Improvement of New 6kV Solid Insulated Switchgear (Smart SIS)	Tomoya, Yoshimura
1276	Success deployment of 6 digital substations in Vietnam 2020-21 – Return of experience	Teoh, Chee-Pinp
1374	Harvesting Intelligent Device Data to Improve Asset Management and Operational Outcomes	Phillips, Kelli
1380	Protection Automation and Control Systems Top-down Engineering Process – From SSD File to Device Configuration	Alexandrino, Mateus
1395	The Implementation and Design Decisions of Process Bus Technology for Distribution Substations at Endeavour Energy	Armstrong, Benjamin Charles

1398	DSO-driven implementation of OT integration platforms for data driven operation and maintenance	Erol, David
1401	Adaptive Transmission Line Autoreclosing and The Effects on System Stability	Mistry, Chirag
1402	Modelling and Challenges of Power Quality in the context of Full Digital Substations	Mistry, Chirag
1405	Frequency Measurement in protective relays and impact by Renewable Energy Sources	Mistry, Chirag
1416	The shape of the IED settings tool to come: an essay focused on configuration and standardization	Lisboa, Guilhermme
1422	The overwhelming task to design a GGIO-less Protection & Control System	Lisboa, Guilhermme
1427	Standardizing the protection calculation process of Renewable Plant Protection system to ensure the coordination and consistency of Vietnamese Protection system	Van Nguyen, The
1440	Novel algorithm for actual boundaries of distance protection in case of fault current contribution from power electronic systems	Galler, Manuel
1452	Post-fault analysis for the end-to-end power system	Macciola Rodrigues, Marco Antonio
1455	Experiences and Learning on Monitoring Digital Substation Communication Networks	Junior, Paulo

Study Committee C1 – Power System Development and Economics

Economics and system analysis methods for the development of power systems: including the areas of System Planning, Asset Management, Business Management and Interconnections.

paper ID	title	submitting_author
1117	Probabilistic medium-term forecasts of half-hourly electricity demand	HICKLING, RICHARD JOHN
1120	ENTSO-E Vision for a power system for a carbon neutral Europe	Klaar, Danny
1136	Hybrid Renewable Microgrid – a Techno Economical Study	Perin, Igor
1158	Conventional and pumped hydro storage value	Vaughan, Donald Patrick
1191	Effort of the Framework development of Non-Firm Type Connection for large integration of Renewable Energy Sources targeting Carbon Neutral Societies	Midorikawa, Masaki
1192	The role of the power sector in a climate-neutral energy system in Europe	Lotze, Jonas
1193	Approach to Aggregate Risk Quantification for Transmission Facilities in Japan	IKEDA, Shouji
1242	Remote Microgrid Area Facility Measures for Addressing the Impact of Renewable Energy	YOSHIHIRO, KAWASAKI
1259	Network Measures for Utilizing and Introducing Storage Batteries in Japan	Onoue, Kentaro
1260	An examples of grid planning aimed at improving facility efficiency under the revenue cap system	KANEKO, Nobuyuki
1284	Application of Predictive Asset Management on Grid Operation	Gubina, Andrej Ferdo
1304	Long-term Transmission Network Expansion Plan for Achieving Carbon Neutrality Goals towards 2050	Onoda, Kodai
1327	Methodology for grid allocation of renewable based on objective merits	Diaz-Guerra Calderon, Belen
1337	"The Transmission Question" – How to connect Offshore Wind Generation in Australia?	Laubi, Andreas
1356	New interconnection corridors for exchanging Renewable Energies from Europe to Australia	LIENHART, Philippe
1358	Planning tools and methods for systems facing high levels of distributed energy resources	Higgins, Charlotte
1371	Incorporating resilience in market modelling for a power system with high levels of variable renewable generation and limited storage	Montiel, Enrique
1381	Developing Queensland Renewable Energy Zones and the Designated Planning Body Function	Narotam, Mahesh
1385	Integrating FACTS-based modular power flow control equipment in the Australian network to economically improve renewable generation dispatch capacity	Harrington, Paul
1388	Optimising Transmission Investments for the Energy Transformation	Pelevin, Michael

1390	Planning of long distance transmission line for interconnection of remote industrial power systems and renewable resources to NEM grid	Murthy, Sameer Krishna
1397	Benefits of increased interconnection between South Australia and New South Wales	Parker, Bradley Wayne
1399	Development of Renewable Energy Zones – the Australian experience	Leung, Joseph
1444	Forecasting demand in a transitioning energy system: A South African Case study	Breedt, Jana
1446	Flexible planning of low-carbon power systems under deep uncertainty	Puschel lovengreen, Sebastian
1456	Optimal power-gas sector coupling via MVDC	Klatzer, Thomas

Study Committee C2 – Power System Operation and Control

Developments and changes in the business of System Operators to meet the evolving environment. WAMS, WAMPS and WAMPACS and their integration within the control centre environment. Development and use of power system analysis and security assessment functionalities within operational planning and real-time supervision, supporting system operators.

paper ID	title	submitting_author
1119	Advanced initializing and coordination technique for simulation of large scale off-grid network using composite load model, grid forming and grid following inverters	Maleki, Sam
1151	AEP's practice in Utility Big Data Management Concerning Real-time System Model Upgrades	LU, YIDAN
1383	Application of Wide Area Monitoring Protection and Control in Queensland, Australia	Dennis, Jonathan
1426	Applying AGC system creatively to automatically control multiple power plants resolving grid congestion and maximizing absorption of renewable energy	Van Nguyen, The
1116	Calculation of Dispatchable Region for Renewables with Advanced Computational Techniques	Liu, Bin (Brian)
1201	Coordinated design of Master Power Plant Controllers in Hybrid Plants and Wind Farms with different OEM controls	Chakraborty, Tamojit
1252	Decoupling Approach for A Unit Commitment Problem with Thermal- and Hydro- Generator Units	Takeuchi, Tomoki
1296	Determining Inertia contribution from grid-forming battery energy storage systems	Modi, Nilesh
1237	Development of an Application for Rescheduling Unit Commitment Considering Operational Constraints	Nomoto, Satoshi
1324	Enhancing System Situational Awareness by PMU-based State Estimation in Active Distribution Power Networks	Cui, Yi
1110	Establish Real-time Pre-commissioning Platform for Integrating Distributed Photovoltaic Energy Resource	Mahmud, Md Rasel
1428	Estimation of transmission line positive sequence parameter using data of WAMs in Vietnam	Van Nguyen, The
1171	Frequency Operating Standards to maintain a secure and resilient power system across the energy transition	Bones, David
1326	Hybrid solution for local voltage control using STATCOM device and automatic voltage control of the tap changer	Diaconu, Ciprian
1300	Impact of Grid-Forming Inverters on Frequency Control of a Grid with High Share of Inverter-Based Resources	Modi, Nilesh
1309	Insertion in operation of Renewable Energies Curtailment automatons	DELEPOUVE, Florence
1146	Management of frequency during non-credible events leading to islanding of network regions with Queensland islanding from NEM as a case study	Athanasius, Germane
1288	Management of network constraints due to low system strength during network outages using Special Protection Scheme	GOYAL, Sachin
1318	Managing Operational Risk of Special Protection schemes (SPS)	Dahal, Sudarshan
1431	Optimal Utilization of HVDC Links in Indian Power System for Transmission Flexibility in a High Renewable Regime	Dash, Gaurab

1424	Optimization of Fault-Ride Through parameters for renewable plants to improve the Vietnamese power system stability	Van Nguyen, The
1392	Practical WAMPAC Control Schemes to Improve the Hosting Capacity for Renewable Energy Zones (REZ)	Vu, Tuan
1439	Pumped storage scenario and its utilization for renewable energy integration in India	Pramanick, Shabari
1297	Resilience test of Indian power system during extremely severe cyclone 'Tauktae'	Gautam, Aman
1425	Sub-Synchronous Resonance (SSR) analysis in real-time thanks to the data exchange between the SCADA/EMS system and the offline study tool	Van Nguyen, The
1441	Suggestions for strengthening of Technical Regulations for Renewable Interconnection (Connection Code) in Indian Power System	Jain, Priyam
1208	Synchrophasor Analysis of Grid Events (SAGE): PMU based tool for the Real time Control Room Security desk	Mohanan, Sudeep
1129	Use of Advanced System Strength Metrics to Identify Critical Regions of a Power Network during Day-to-Day Operations	Ramasubramanian, Deepak
1357	Using smart meters for low voltage network control and demand management	Makwarela, Edison
1154	Utilisation of a Real Time Frequency Stability tool to support operating decisions in a reduced inertia power system.	Frost, Russell
1372	Widespread PMU Installation: Australian Experience	Guest, James

Study Committee C4 – Power System Technical Performance

Advanced methods and tools for analysis related to power systems. Including Power Quality Performance, EMC, Power System Dynamics, Lightning and insulation co-ordination.

paperID	title	submitting_author
1113	Assessment to Quantify the Impacts of Omitting the Frequency Dependent Modelling of Existing IBR Plants on Grid Harmonic Impedance Computation for New Connections	Perera, Lasantha
1118	Advanced Coordination Between Controller and Protection Settings of Inverter-Based Resources in Response to TOVs After Ground Faults Clearance	Maleki, Sam
1121	Commissioning of major power system upgrades	Robinson, Luke
1150	Resilience Estimation of Electrical Power Systems	Siqueira, Iony Patriota
1152	Commissioning experiences with Inverter Based Renewable plants: Observed plant behaviours and issues	GOYAL, Sachin
1162	Revision and Validation of IBR Harmonic Models Using Field Measurements	David, Jason
1163	Certainty in power quality compliance, from desktop to evolving reality	Jansen, Marius
1173	Optimal allocation of harmonic emission limits applied to a real transmission grid	Lindner, Marco
1205	Impact of System Strength and Control Parameters on the Small-Signal Stability of Grid Following and Grid Forming Inverters	Bai, Feifei
1206	Comprehensive voltage regulation performance analysis of Virtual Synchronous Generator	Xu, Jingzhe
1209	Analysing Impact of Renewable Energy Penetration on Power System Inertia of Indian Grid Using Synchrophasors	Siddique, Abdullah
1210	Application of impedance scan stability techniques to support new generator connections in the Australian NEM	Hagaman, Scott Andrew
1220	Combined zonal and local control using grid-forming inverters in a complex medium- and low-voltage island grid: a study case in a realistic German network.	Pabon Ospina, Luis David
1229	Challenges of Harmonic Assessment for Inverter-based Generators	Tavakoli, Ahmad
1230	Tuning of Inverter-Based Renewable Generation in Australian NEM: Opportunities, Issues and Challenges	Coetzee, Tyler Wayne
1234	Challenges in connection of renewable energy sources to Australia's electricity grid	Mehrtash, Amir
1235	Reliable Protection of Wind Farm Assets from Lightning Strikes and TOVs Considering Surge Arrester Failure Probability	Mahamedi, Behnam
1238	Benefits in harnessing the latent reactive current injection capability of inverter-based resources in the Australian power system	Wembridge, Christopher James
1240	Negative sequence control of six-pulse inverters for improved performance during network faults	Wembridge, Christopher James
1241	Transient Stability Investigation of Grid-forming Inverters in the Presence of Various Types of Current Limiters	Me, Si Phu

1245	Root-Mean Square Model of EV Charging Inverter for Balanced Fault	Masuda, Muneki
1249	Dynamic modelling and simulation of grid-forming and grid-following inverter-based resources for system restoration studies	Badrzadeh, Babak
1253	A Comparative Analysis of Grid Forming and Grid following Control in Full Power Fed Wind Turbines in the Australian Grid	John, Blessy
1254	Assessing the response of electric vehicles during network fault conditions	Franklin, Evan
1255	A Comprehensive and Innovative Approach to Manage Harmonics for Renewable Energy Zones (REZ)	Vu, Tuan
1268	Wind Power Integration in Weak Grids	Kabiri, Roozbeh
1273	Lightning Risk Assessment in Real-Time in the Vicinity of Power Systems	Schwalt, Lukas
1275	Impact of massive increase in wind power on system dynamics in the Finnish power system	Harjula, Antti
1289	Small signal model development and testing of inverter-based renewable plants	GOYAL, Sachin
1301	Impact of Distributed Photovoltaic System on System Strength	GOYAL, Sachin
1311	Theoretical analysis of corona-induced high-frequency interference caused by 315 kV transmission lines located near airport	Turcotte, Olivier
1313	Impact of external conditions on the development of frequency domain models of Inverter Based Resources	David, Jason
1314	Optimal Placement and Sizing of Synchronous Condensers in Weak Power Systems	Fouladi, Ehsan
1322	Real-time oscillatory instability monitor – development and field test results	Cella, Umberto Maria
1323	Harmonic assessment and emission allocation for future grid	Cella, Umberto Maria
1334	Voluntary grid-forming specifications to support the transition to low-carbon power system	Modi, Nilesh
1338	Management of power system frequency excursions with the integration of large HVDC interconnection	Fracalossi, Daniel
1340	Fading oscillations in grid with low damping	Cella, Umberto Maria
1344	Determining Optimised Harmonic Filter Locations in a Meshed Power System – A Case Study from Denmark	Bukh, Bjarne Sondergaard
1352	Impact of a large synchronous unit on the oscillatory stability of the changing power system	Harjula, Antti
1386	Accounting for capabilities and limitations of new and emerging generation technologies	Crooks, Nathan
1394	Dynamic challenges of a hybrid plant with a grid forming technology in a remote area.	Hadavi, Sajjad
1410	Challenges of Modelling Complex Industrial Loads for System Studies	Fonseka, Jagath
1415	Investigation of reactive current injection of grid-following and grid-forming inverter-based resources during fault conditions	Badrzadeh, Babak
1417	Impact of Component Tolerances on Frequency Domain Representation of Inverter Based Resources	Hernandez Manchola, Alvaro Jose
1418	Virtual Synchronous Generators: Small-signal Stability Analysis under Varying Operating Points, Grid Strengths, and Control Parameters	Mohammed, Nabil

paperID	title	submitting_author
1448	The influence of the traction power supply system for the metro on the grid substations with corresponding suppression	Wu, Guangning
1449	Influence Analysis of the Frequent Overvoltage Impulses on the Terrestrial Traction Substations for High-speed Railway	Xiao, Song

Study Committee C5 – Electricity Markets and Regulation

Analysis of the impacts on the planning and operation of electric power systems of different market approaches and solutions. Market Structures, techniques and tools used in price forecasting and financial risk management/ regulation and legislation, Evolution of and the co-ordination and regulation of markets.

paperID	title	submitting_author
1114	Creating a JUST energy transition for embedded generation via customer empowerment in South Africa	Pandarum, Aradhna
1153	Singapore Energy Transition Plans	Li, Zhenhui
1166	Queensland Energy and Jobs Plan - Power for Generations	Bridge, Jacqueline
1211	The role of technical standards in the energy transition	Crisp, Jennifer Jane
1280	Electricity markets during a period with extreme prices - Experiences from the NordPool market.	Mo, Birger
1308	Innovative network tariffs to better integrate DER with the grid	Hoch, Lance Jeffrey
1315	Frequency performance payments in the NEM	Hiron, Ben
1316	How efficient network tariffs can drive more deployment and efficient use of grid-side batteries	Harris, Rohan Ashley
1321	Impact of Hydrogen demand side participation on industry financial in National Electricity Market	Narimani, Afsaneh
1331	Commerciality of green hydrogen for electricity generation: balancing supply costs with customer expectations	Hinchliffe, Stephen
1332	DER-integrated geospatial load forecasting	Hanakago, Hiromu
1346	Regulating Service provision for intermittent inverter-based sources in tropical environments	Tonking, Peregrine Michael
1361	Overview of the Australian NEM	Thorpe, Gregory
1362	Suspension of the Australian NEM: The events and lessons	Thorpe, Gregory
1368	Non-network solutions: how effective are the current rules in Australia?	Lenzi Castro, Marco
1373	Ensuring energy security and reliability in Singapore's Wholesale Electricity Market with a future of high-capacity renewable imports	Vanderwaal, Ben
1396	Delivering the transmission system required for a clean energy future in the Australian National Electricity Market	Korte, Rainer
1447	Alignment of Retail Demand Response with Wholesale Markets through Functional Standards for Flexible Demand Appliances	Chuang, Angela

Study Committee C6 – Active Distribution Systems and Distributed Energy Resources

Integration of DER, storage technologies, electric vehicles, multi-energy systems, smart cities, rural electrification, microgrids, virtual power plants, customer integration and empowerment, demand response, advanced metering systems and MV/LV DC systems.

paperID	title	submitting_author
1108	Five-stage framework for flexibility based system optimisation	de Haan, Evert
1122	Active Network Management to support increased grid utilisation – ANM4L project results	Hillberg, Emil
1123	Basic Methodology for Calculating Dynamic Operating Envelopes	Guinman, Alex
1124	An end to end electricity system, but where does the customer fit? How can customers help us build the right distribution networks	Jones, Laura
1125	Vehicle to what? Making bidirectional charging work for people	Jones, Laura
1135	Control Scheme of Battery Energy Storage System for Black Start of Gas Turbine	Li, Xu
1141	How to manage the network to maximise the value proposition of increasing customer owned DER?	Vashishtha, Yogendra
1144	Comparison of Reactive Power Support Capability between Grid-Forming Energy Storage System and Condenser under HVDC Commutation Failure	Zhang, Xing
1160	Demonstration of Multiple Voltage Source Control and Ground Fault Detection Using LVDC Distribution Facilities	Yonezawa, Kento
1164	Building Network Visibility Architecture to gain and use insights for the low carbon transition.	Vashishtha, Yogendra
1169	Eliminating overload in distribution systems by utilizing DER	Ikemoto, Yoshifumi
1194	Energy Balance Tool for the Operational Planning of Hybrid Mobile Generators – Islanded Grid Operation with the Infeed of Distributed Generation Systems	Lechner, Tobias
1197	ADMS Success through Road Mapping of Existing Grid Modernization Programs	Snodgrass, Joshua
1198	Importance of Automating Distribution Resiliency Analysis for Climate Hazards	Snodgrass, Joshua
1204	Future-proofing Power System Planning, Operational and Stability Analysis through DER and Load Bench-Testing and Modelling	Konstantinou, Georgios
1219	Voltage Regulation and Load Relief in Medium Voltage Feeder Supported by Battery Energy Storage System	Leite, Leonardo
1269	Grid disturbances including partial blackouts due to electrical behaviour of Inverter-based generating units during transmission line faults and Shunt Reactor switching- Experiences of Indian power system	YADAV, SANDEEP

1292	Decentralised Calculation of Dynamic Operating Envelopes for Distributed Energy Resource Management in Distribution Grids	Barzegar, Alireza
1302	Hybridization in the Balbina Hydroelectric Plant Reservoir	Aviz, Carlos
1305	Implications of managing distribution network assets with a very high level of solar generation: New Zealand experience	Martin, Daniel
1330	Microgrid Frequency Control	Stephens, David
1350	Impact of Renewable Energy on Power Quality in Distribution Systems	Elphick, Sean
1370	Operational Resilience Enhancement in Distribution Networks: A Risk Analysis and Interruption Cost Modelling Approach with Adaptive System Restoration and Demand Response Management	Kheirkhah, Ali Reza
1377	Integrating DER for operational management	McConnell, Andrew James
1379	Study of Transient Oscillations in Emergency Shedding of Legacy Distributed PV Generation through Substation Voltage Management	Rajabpour, Leila
1384	From Model-Driven to Model-Free: Comparisons using Real Smart Meter Data and Real Distribution Network from Australia	Liu, Michael
1403	Community Battery Trial – Control and Optimisation of Power Capacity	Luc, Alan
1404	Procuring a Distributed Energy Resources Management System	Bow, Wilson
1411	Using System-based approach for testing Protection relays in power systems with varying penetration of renewable energy recourses	Yousuf, Ahmad
1414	Three-phase voltage balancing using active power transfer between phases	Ciobotaru, Mihai
1443	Pole-mounted community energy storage system to capture the full value stack	Ciobotaru, Mihai

Study Committee D1 – Materials and Emerging Test Techniques

Monitoring and evaluation of new and existing materials in electrotechnology applications, along with diagnostic and test techniques where knowledge rules and requirements of the new techniques are being developed.

paperID	title	submitting_author
1128	A validated practice for transformer retrofilling	Scatiggio, Fabio
1170	Accuracy testing of a high-voltage transformer under rated fundamental voltage and superimposed harmonics	Li, Yi
1353	Application of On-Site Frequency Domain Spectroscopy Measurement on Medium Voltage Cross-Linked Polyethylene Power Cables	SINGKHAWAT, PONGPON
1450	Aspects of Standardization of RCR Dividers for Measurement of Composite Voltage on DC Cables and DC GIS/GIL	Schichler, Uwe
1282	Dielectric properties of polypropylene/UHMWPE nanocomposites for power cables	Andritsch, Thomas
1218	Dissolved gas analysis (DGA) monitor performance testing and evaluation methods	Mellin, Toni
1335	Leveraging Home Automation Principles for OLCM Integration at Utilities	Murali, Sam
1223	Lifetime cost evaluation of continuous online dissolved gas analysis (DGA) monitoring	Mellin, Toni
1148	Performance evaluation of sugar graze paper for transformer solid insulation application	Ekanayake, Chandima
1369	Production, Analysis and Identification of Crystal By-products in C3F7CN Mixtures	Chen, Lujia
1454	Required Improvement of UHF PD Detection for gas-insulated Systems	Schichler, Uwe
1232	Verification of a Current Transformer's Accuracy on Distorted Current Waveforms	Yan, Wei (Winston)

Study Committee D2 – Information Systems and Telecommunication

ICT equipment, architectures, security and governance including consideration of fundamental principles, design, specification, testing engineering, commissioning, performance, operation and maintenance aspects. ICT applied to digital networks, communication solutions, interoperability and data exchange, IT systems in Asset Management.

paperID	title	submitting_author
1107	Verification and Validation of Packet based (MPLS-TP) Technology for Transporting Tele-protection (Current Differential) services with existing TDM based Network through Lab testing and Field Trial	Kul, Kulbhushsan
1111	Practical Approach to Generation Site Using Digital Transformation Technology for Data Driven Monitoring: Case of Origin Energy	Abdullah Thani, Ahmad Taufiq
1161	Development of a Radio Tower Inspection Method using Automatic Drone Photography and AI-based Image Judgment	Saga, Yuya
1168	Automated creation of Distribution Network models from GIS and other data	Owens, Craig
1176	Innovative approach for Automatic identification of defects from photos captured through various transmission line patrolling modes using Artificial Intelligence and Machine learning	Joshi, Neeraj
1177	Vulnerability estimation of Transmission lines for enhancing operational efficiency and Operation cost reduction	Joshi, Neeraj
1179	Private LTE Reshaping FAN for Grid Distribution Automation	Bin Ishak, Khairul Azhar
1181	Security Risk and Protection Analysis for 5G Power Virtual Private Network	Hu, Baiji
1182	Construction of an IP network for wider bandwidth and enhanced resilience	Okamura, Taku
1183	Case Study on Advancement of Electric Power System Maintenance Work Using ICT	Miyagi, Tomoya
1184	Improving Maintenance and Operational Efficiency of a Telecommunications Network Infrastructure to Transmit IoT Information	Wada, Kentarou
1186	Use Cases for Remote Maintenance Management of Telecommunication Facilities Using 3D Data in Japan	Sato, Koji
1187	Detecting abnormalities in power facilities by edge computing technology	Sawada, Katsuhito
1190	Challenges and contrivances in application of in-house AI algorithm to inspect various electric power equipment	Araki, Shohei
1203	Detection and Mitigation of Cyberattacks on Volt-Var Control	Beikbabaei, Milad
1225	Strategic approach to cybersecurity resilience in electricity distribution company	Ceferin, Peter
1279	Implementing IP/MPLS network based synchronization for line differential protection and control	Louh, Amadou
1283	Enabling distance protection between fully digital IEC61850 and contact based legacy substations	Bächli, Ramon
1287	Asset Data Management as part of the Strategy to Operate and Maintain End-to-End Electricity Systems	de Araujo, Marcelo Costa
1299	Data-Driven Technique to Enhance Power System Cyber Resilience	Rahimpour, Hossein

1351	CIM for Network Planning and Power System Development	Belyaev, Nikolay
1393	Building a threat led Security Operations Centre (SOC)	Caldeira, Lindbergh Clement

CIDER (Conference on the Integration of Distributed Energy Resources)

CIDER 2023 - Cairns - 4-5 September 2023 - Provisional Program

Session	Day 1 - Monday 4 September 2023
8:30 - 10:00	Not Available - Symposium Plenary
10:00 - 10:30	Morning Tea
10:30 - 12:20	Opening Introduction to the Australian Electricity System (Adrian Lloyd) **Managing High Penetration of DER** DER and System Security - Managing a 100% DER Power System (Jenny Riesz) (Extended Presentation) Operational Experiences from a 100% Solar Network (Cathryn McDonald) Scheduling and Dispatch in a High DER System (Sera Tarpis) Five-stage Framework for Flexibility Based System Optimisation (Evert de Haan)
12:20 - 13:20	Lunch
13:20 - 15:10	**DERMS** ADMS Success through Road Mapping of Existing Grid Modernization Programs (Joshua Snodgrass) Procuring a Distributed Energy Resources Management System (Wilson Bow)

CSIP-AUS - Using IEEE 2030.5 for Flexible Management of DER (Tim Moore)

Dynamic Operating Envelopes and State Estimation

Basic Methodology for Calculating Dynamic Operating Envelopes (Alex Guinman)

Model Free Dynamic Hosting Capacity and Operating Envelopes (Brendan Banfield)

Successful State Estimator Deployment in Active Distribution Grids - SA Power Networks' Challenges and Learnings (Ashley Niebling)

15:10 - 15:40	Afternoon Tea

Quality of Supply

Developments in Distribution Voltage Management with Increasing DER (Peter Kilby)

Impact of Renewable Energy on Power Quality in Distribution Systems (Sean Elphick)

15:40 - 17:30   Implications of Managing Distribution Network Assets with a Very High Level of Solar Generation: New Zealand Experience (Daniel Martin)

NGN Session

The Impact of DER on Planning & Operation of Electric Power Systems, from the Perspective of the Next Generation

Day 2 - Tuesday 5 September 2023

Virtual Power Plants

The VPP Landscape in Australia (Caitlin Trethewy)

Dynamic Pricing for Network Capacity Management in Two-sided Markets (Jonathon Dore)

Electric Vehicles

8:00 - 9:50 Vehicle to What? Making Bidirectional Charging Work for People (Laura Jones)

Managing EV Charging to Mitigate Grid Impacts (Justus van Biljon)

DER Enablement

Integrating DER for Operational Management (Andrew McConnell)

Impact of DER on Transformers (Matthew Gibson)

9:50 - 10:20	Morning Tea

10:20 - 12:10	Firming the Load - Keeping the Grid Functional and Affordable (Peter Price) (Keynote Address)
	Customer Engagement
	An Australian DER Bill of Rights and Responsibilities (Niraj Lal)
	Techno-economics of Distributed Energy Markets: Findings from Project EDGE (Pierluigi Mancarella)
	Save the Australian Power System from Imminent Collapse! (NGN)
12:10 - 13:10	Lunch
13:10 - 15:00	**Microgrids**
	Microgrid Frequency Control (David Stephens)
	Co-designing for Resiliency: The Bawley Point and Kioloa Community Microgrid (Albert Pors)
	Grid Shrinkage
	Western Power's Transition to a Modular Distribution Grid (Janica Lukas)
	Stand-alone Power Systems (SAPS) are One Piece of the Puzzle in Energy Queensland's Fringe of Grid Strategy (Sophie Allen)
	Community Batteries
	Neighbourhood versus Household Batteries: A Comparison of Benefits for the Grid and for Households (Marnie Shaw)
	Pole-mounted Community Energy Storage System to Capture the Full Value Stack (Mike Wishart)
15:00 - 15:30	Afternoon Tea
15:30 - 17:20	**Inverters**
	Reverberating Disturbances: Towards a Secure Decentralised Power System (Naomi Stringer)
	Future-proofing Power System Planning, Operational and Stability Analysis through DER and Load Bench-Testing and Modelling (Georgios K
	Standardisation
	Evolving DER Standards (Jenny Gannon) (Extended Presentation)
	Concluding Remarks (Ray Brown)

SEAPAC (South East Asia Protection and Automation Conference)

SEAPAC 23 — CIGRE Australia

South East Asia Protection, Automation and Control Conference
(SEAPAC 23 will be incorporated within the CIGRE Cairns International Symposium 2023)
5th September 2023, Cairns, Australia | Cairns Convention Centre, Cnr of Wharf & Sheridan Street, Cairns City, QLD

TUESDAY 5 September - Auditorium D	Paper No.	Presenter	Company	
Session 1 – PACS experience & event investigation		Session Chair: Rob Coggan	Energy Queensland	8:00– 9:50
Welcome & Introduction		Peter Bishop		8:00 – 8:15
To Trip or not to Trip at lightning speed	855	Satendra Bhola	TasNetworks Pty Ltd	8:15 – 8:30
IEC 61850 quality implementation applied to relay protection and logic	871	Ian Young	Schneider Electric	8:30 – 8:45
Experiences with various special protection schemes	882	Lara Kruk	Jacobs Consultants	8:45 – 9:00
Performance of IEC 61850 Sampled Values Relays for a Real-World Fault	888	Ryan McDaniel	Schweitzer Engineering Laboratories, Inc.	9:00 – 9:15
End of Session Q & A				9:15 –9:50
Morning Tea – Arena - allow time to return to presentation room				9:50– 10:20

Session 2 – PACS associated with renewable generation		Session Chair: Satendra Bhola	TasNetworks Pty Ltd	10:20– 12:10
Apply the Underreach Distance Zone to Connect Renewable Sources	876	Leonardo Torelli	CSE-Uniserve	10:20 – 10:35
Line Distance Protection Near Unconventional Energy Sources	896	Bogdan Kasztenny	Schweitzer Engineering Laboratories, Inc	10:35 – 10:50
Line Current Differential Protection in Systems with Inverter-Based Resources—Challenges and Solutions	903	Ritwik Chowdhury	Schweitzer Engineering Laboratories, Inc	10:50 – 11:05
Accelerated protection schemes for systems with high penetration of Inverter Based Resorces	886	Alexander Apostolov	Omicron Electronics	11:05 – 11:20
Changing Dynamics of Protection due to Increased Renewable Integration	869	Ritesh Bharat	Powercor	11:20 – 11:35
Protection and integration of Phase Shifting Transformers and SynchCons in TransGrid network- Project Energy Connect	864	Gurinder Saluja	Transgid	11:35 – 11:50
End of Session Q & A				11:50–12:10
Lunch – Arena - allow time to return to presentation room				12:10 – 13:10
Session 3 – Testing and new technology		Session Chair: Justin Brown	Beca Consultants	13:10– 15:00
Functional digital twins of relays and test equipment enable significant cost and time savings	863	Niclas Wetterstrand	Siemens Ltd	13:10 – 13:25
System-based testing of protection and automation schemes - a transmission utilities perspective	880	Jarrad Raumati	Transpower NZ Ltd	13:25 – 13:40
Implementing IP/MPLS network-based synchronization for line differential protection and control	868	Amadou Louh	Stedin Netbeheer B.V.	13:40 – 13:55
Optimal Use of IEC61850 Test Modes in Substations	883	Daniel Abetz	Siemens Ltd	13:55 – 14:10
Power Swing Detection / trip Testing in IEDs using smart testing Methodology	857	Dinesh Babu Nagalingam	Megger	14:10 – 14:25
Inrush / Fault Current Detection for Accelerated Fault Clearance to	856	Dinesh Babu	Megger	14:25 – 14:40
End of Session Q & A				14:40–15:00

TUESDAY 5 September – Auditorium D	Paper No.	Presenter	Company	
Afternoon Tea – Arena - allow time to return to presentation room				15:00 – 15:30
Session 4 – Protection and automation design and implementation		Session Chair: Frankie Lu	Siemens Ltd	15:30 – 17:20
A new adaptive Auto Reclosure Approach utilising Secondary Arc Detection	884	Jörg Blumschein	Siemens Ltd	15:30 – 15:45
Relay design for future PACS	885	Ian Young	Schneider Electric	15:45 – 16:00
Implementation of Phasor Measurement Units	879	Matthew Priestley	Beca Consultants	16:00 – 16:15
Distance protection in a six multi-ended transmission line scheme: Application review	887	Leonardo Torelli	CSE-Uniserve	16:15 – 16:30
Challenges and solutions for IEC 60255-187 CT model	872	Ian Young	Schneider Electric	16:30 – 16:45
Adaptive Transmission Line Autoreclosing and The Effects on System Stability	906	Chirag Mistry	GE Vernova	16:45 – 17:00

End of Session Q & A   17:00 – 17:20