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| DAY 1 – Thursday, 7 November 2019 | Presenter | Company |  |
| Conference Registration |  |  | 0745 - 0830 |
| **Welcome & Introduction to Conference.** **Welcome from Bess Clarke (TasNetworks)** **Welcome from Steve Davy (Hydro Tasmania)** |  |  | 0830 - 0840 0840 - 0850 |
| Futuristic Networks: Grid Collection Substations | Anurag Gupta | GHD | 0850 - 0910 |
| Connecting Renewable Generation Sources – Now a Network issue | George Bergholcs | ElectraNet | 0910 - 0930 |
| Deployment of a Distributed Energy Resource Management System (DERMS) to the Onslow Microgrid | Lee Ucich | Horizon Power | 0930 - 0950 |
| Integrating Synchronous Condensers into Renewable Generator and Grid Substations | Peter Berry | CPP | 0950 - 1010 |
| Questions and Answers |  |  | 1010 - 1030 |
| Morning Tea |  |  | 10.30-10.50 |
| Introduction to Seminars of Day 2 |  |  | 1050-1100 |
| Introduction to "Low Cost Substation Design Solutions (for Developing Countries)" Seminar | Perry Tonking | CIGRE |  |
| Introduction to "Current Interruption in Atmospheric Air" Seminar | David Peelo | IEEE |  |
| Introduction to Substation Earthing System Design Optimisation Through the Application of Quantified Risk Analysis (QRA) | Steve Palmer | SafeEarth |  |
| Introduction to Workshop - Battery Storage – the missing piece in the renewables jigsaw! | Stanislav Cherevatskiy | ABB |  |
| Introduction to Guest Speaker  |  |  | 1100-1105 |
| **Key Note Address Guy Barnett –Minister for Primary Industries & Water Minister for Resources Minister for Energy**  |  |  | 1105 - 1120 |
| The possibilities of hydrogen technologies in direct network support applications | Mark Jackson | Mark G Jackson Consulting | 1120 - 1140 |
| Integration of a Large BESS to a Brownfield Substation | Dorin Costan | ElectraNet | 1140 - 1200 |
| Isolation techniques and guarding against the risks of back feeding | Faraz Mirzaagha | DNV GL | 1200- 1220 |
| Questions and Answers |  |  | 1220 - 1230 |
| Lunch |  |  | 1230-1300 |
| Case Study/Panel Discussion |  |  | 1300 - 1400 |
| Paradigm Shift in Power Transformer Asset Management by “Digitizing” & “Digitalizing” Temperature Measurements | Bhaba Das, Naser Hashemnia | ABB | 1400 - 1420 |
| Managing technical and non-technical challenges in the transition to a digitalised substation | Lara Kruk | Jacobs Engineering | 1420 - 1440 |
| Experiences with TransGrid’s Journey to Substation Digitisation | Mark Jones | TransGrid | 1440 - 1500 |
| Earthing Systems and Substation Digitisation-issues, investigations and solutions | Stephen Palmer | Safearth | 1500 - 1520 |
| Questions and Answers |  |  | 1520 - 1530 |
| Afternoon Tea |  |  | 1530-1550 |
| Performance and Operational Experiences of High Voltage GIS with clean air insulation and digital features | Chris Gonzalez | Siemens | 1550 - 1610 |
| Point on Wave Switching of Power Transformers | Alan Crombie | UGL | 1610 - 1630 |
| End of Life Strategies for Substation Gantry Steelwork and Foundations | Sam Murali | TransGrid | 1630 - 1650 |
| Developments in the use of non-SF6 gases and gas mixtures for a more sustainable grid  | Terry Krieg | Power Network Consulting | 1650 - 1710 |
| Questions and Answers |  |  | 1710 - 1720 |
| **Close of Day 1** |  |  |  |
| **Cocktail Reception & Networking Function – Trade display area, Wrest Point Casino** | 1730 - 2030 |

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| DAY 2 – Friday, 8 November 2019 | Presenter | Company |  |
| Welcome |  |  | 0830 - 0835 |
| **Tutorial - Low Cost Substation Design Solutions (for developing countries)** This tutorial presents the work of CIGRE WG B3.43 and the technical brochure 740 published in August 2018 and presents a contemporary approach to the design of high voltage substations. The work provides a good basis for the many considerations involved with design and is just as applicable for developed as it is for developing countries.  | Perry Tonking | WG Convenor of B3.43CIGRE | 0835 - 0935 |
| Questions and Answers |  |  | 0935 - 0945 |
| Morning Tea |  |  | 0945-1000 |
| Introduction  |  |  | 1000 – 1005 |
| **Tutorial - Current Interruption in Atmospheric Air**David Peelo is an international expert on switching in high voltage networks with particular expertise in current interruption using air-break disconnectors. The tutorial explains the behaviour of free burning arcs in air as related to the interruption of transformer magnetizing, capacitive charging and loop currents with a view to achieving safe operating practices. | David Peelo |  | 1005 - 1100 |
| Questions and Answers |  |  | 1100 - 1110 |
| **Tutorial - Substation Earthing System Design Optimisation Through the Application of Quantified Risk Analysis (QRA)**This tutorial presents and explains the creation and application of CIGRE TB 749. It shows the staged use of QRA in a practical and robust earthing system design approach which can reliably produce a balance between cost, practicality and management of risk for the resultant earthing system. | Stephen Palmer Bill Carman | SafeEarth | 1110 - 1210 |
| Questions and Answers |  |  | 1210 - 1220 |
| Lunch |  |  | 1220-1250 |
| Introduction |  |  | 1250 - 1255 |
| **Workshop - Battery Storage – the missing piece in the renewables jigsaw!**This workshop will detail and discuss some of the key network services provided by the BESS, including issues such -BESS - Virtual generator- Stability and synthetic inertia services- Reliability and microgrid functionality- Power quality support (frequency and voltage)- Fault current provision- Integration of renewable energy sources: centralised and distributed- Non-convention control methods to increase hosting capacity- Future developments and applications as sizing, system strength and capability, and will include discussion of the learnings from design, installation and testing of BESS in substations. |  |  | 1255 - 1500 |
| Questions and Answers |  |  | 1500 - 1510 |
| **Thanks and Conference Close** |  |  | **1510 - 1515** |

**CIGRE Australia would like to acknowledge and thank the following sponsors who have helped stage this event**

   