

EECON 2019

Engineering Leadership Providing Sustainable, Customer-Centric
Electric Energy Solutions Through The Interactive Grid



NOV 26-27 | SYDNEY

International Convention Centre Sydney

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THE ELECTRIC ENERGY SOCIETY OF AUSTRALIA

EECON 2019 | 26th-27th November 2019

It is my great pleasure to welcome you to EESA's annual 2 day National Electric Energy Conference—EECON 2019 - this year being hosted by the NSW/ACT Chapter of EESA.

The theme of EECON 2019 is ***'Engineering leadership providing sustainable, customer-centric electric energy solutions through the interactive grid.'***

The EECON 2019 Conference Organising committee has put together a really interesting program that I believe will give attendees a good understanding of many of the challenges and opportunities they are likely to see over the coming years in this rapidly changing industry.

The EESA NSW Chapter has also been keen to give attendees the opportunity to engage with companies who provide equipment and/or services to the Electric Energy Businesses. Thus there is a great opportunity for attendees to understand some of the latest technologies, products and services currently available, as well as those becoming available in the electric energy area.

The conference has a diverse range of informative and interesting speakers. I believe that you will gain a good understanding of the issues impacting the ever changing electric energy businesses, the methods and tools which have worked successfully, as well as the opportunities and challenges still to be managed. I believe that you will return to your organisation better prepared for the increasingly complex energy landscape of the future.

This is a technical conference, providing ongoing professional development for technical people in the ever expanding electric energy industry. It is a great way for members of Engineers Australia to earn professional development points. I invite you to listen, participate, question, network and most of all - be informed!

Welcome to EECON 2019.

Jeff Allen—EESA National President

Day One: Overview

Day One: Tuesday 26th November

From 8.00am	Registration, arrival coffee and Exhibition	
8.45am—9.00am	Conference Welcome Address Jeff Allen—National President, EESA	
9.00am—10.30am	Opening Plenary Session The future is already here <i>Peter Brown</i> , General Manager, PSC New Zealand Cargill Presentation	
10.30am—11.00am	Morning Tea in the exhibition area	
11.00am—12.30pm	Technology and Evolution I Exploring High Penetration DER — <i>Laurie Curro</i> , General Manager Power Systems, Horizon Power Initial Lessons from St Kilda, Cambridge, a 100% photovoltaic Subdivision — <i>Pete Armstrong</i> , Waipa Networks, Te Awamutu, NZ Flexing Networks for Integration of Solar PV — <i>Sean Elphick</i> , Research Coordinator, University of Wollongong	Regulatory and Transmission I Powering Sydney —Transgrid Interconnectors —Transgrid Price Signals in the NEM - Are They Working and What Are They Telling Us? — <i>Allan O'Neil</i>
12.30pm—1.30pm	Lunch and exhibition	
1.30pm—3.00pm	Technology and Evolution II Virtual Utility — <i>Alberto Costa</i> , NSW/ACT Manager - Power & Enegry, SMEC Australia Pty Ltd Visibility and control of distributed resources and loads on a multi-directional grid — <i>Andrew Mears</i> , CEO, SwitchDin International case studies on microgrids and utility scale energy storage: Common threads to optimise systems and monetise value — <i>Claude Morris</i> , Microgrid Technology Leader, GHD	Regulatory and Transmission II Battery of the Nation — <i>Cameron Potter</i> , Future Energy Market Strategist, Hydro Tasmania Project Marinus — <i>Stephen Clark</i> Integration of Remote Offshore Energy with High Voltage Direct Current (HVDC) — <i>Stephen Butler</i> , Systems Consultants
3.00pm—3.30pm	Afternoon Tea and exhibition	
3.30pm—5.00pm	Technology and Evolution III Impact of REFCL (Bushfire Mitigation Technology) on HV Customers — <i>Abrar Aziz</i> , Electrical Engineer, Middleton Group Benefits of using voltage regulating distribution transformers for grid integration of renewables - Lessons learned from first installations in Australia and New Zealand — <i>Dr. Thomas Smolka</i> , Business Development of VRDT, MR Quantifying the Effects of Electric Vehicles on the Tasmanian Low Voltage Network — <i>Michael Jurasovic</i> , Graduate Engineer, TasNetworks	Security ADMS in SAPN — <i>Travis Kauschke</i> , Future Networks Engineer, SAPN Building resilience for our Port Township (NZ) <i>Shaun Allen</i> , Engineer, Orion Group <i>Phil Bunnage</i> , Project Manager, Orion Group Automated switching in Railways — <i>John Forrest</i> , EIIP Systems Engineering and Assurance Lead, Sydney Trains
5.00pm—6.00pm	Networking Drinks and Exhibition	
6.30pm—10.00pm	Conference Dinner at L'Aqua	

Day Two: Overview

Day Two: Wednesday 27th November

From 8.00am Morning coffee and Exhibition

8.45am—9.30am **ENA Network Transformation Roadmap** | *Jill Caine*y, General Manager Networks, ENA
Leading the way: Changing the adversarial client contractor model | *Dr Graeme Bathurst*, Vice-President (International), RXHK

9.30am—11.00am **People and Safety I**

Professional development—Mike Griffin, Chief Executive, Australian Power Institute

Safety in Design at Orion—Alisdair Reid, Engineering Manager, Orion NZ Ltd

Internal Arcs: Pressure Rise Versus Cooling Methods In Air Insulated Mv Switchgear—Mihir Maharaja, Product Manager - MV Switchgear, Eaton

Asset Management I

Understanding the past, present and future of vegetation risks on a bushfire prone electricity network with geospatial analysis—Scott McKenzie, Vegetation Manager, Endeavour Energy

Automated Medium/Large Scale Embedded Generator Site Locator: GIS Analysis. A case study of Queensland, Australia—Angel Caceres, Electrical Engineer, Hatch Pty Ltd

Early Fault Detection prevents powerline faults and fires—Tony Marxsen, Chairman, IND Technology

11.00am—11.30am Morning Tea in the exhibition area

11.30am—1.00pm **People and Safety II**

Misleading earth resistance of meteorological masts for lightning protection—James Derricott, Principal Engineer, Zero Sequence Earthing

Challenges in Solar Farm HV Earthing Design
 Scott Mitcherson, Senior Earthing Engineer, Zero Sequence Earthing

Electromagnetic Compatibility - The Dark Magic that keeps us safe—Keith Middleton, Managing Director, Middleton Group Engineering

Asset Management II

Thermal monitoring reduces the risk of fire
 Schneider Electric

Designing for resilience and inspection with AS/NZS 7000—Nathan Spencer, Director, Revo Group

Smart Grids for Remote Areas—John Fletcher, UNSW

1.00pm—2.00pm Lunch and Exhibition

2.00pm—3.15pm **Brains Trust Panel: Summary of conference content, new learnings and technology and open Q&A**

Chris Wering
Peter Langdon
Patrick McMullan
Bruce Howard
Robert Barr

Terry Niemeier
David Sweeting
Simon Lewis
Trevor Blackburn
Denis Cooke

3.15pm—3.30pm Presentation of Prizes and conference close

Day One: Comprehensive

Tuesday 26th November

From 8.00am Registration, arrival coffee and Exhibition

8.45am—9.00am Conference Welcome Address | **Jeff Allen—National President, EESA**9.00am—10.30am **Opening Plenary Session****Cargill Presentation****The future is already here** | *Peter Brown, General Manager, PSC New Zealand*

Exploring a range of concepts and mini cases studies from our experiences around the world including:

- Looking at Big to Small, and back again.
- Moving from large infrastructure to distributed systems combined with Global, National and local trends.
- We're seeing convergence is everywhere and changing everything, because together is better.

Violette Mouchaileh—Executive General Manager, Emerging Markets and Services, Australian Energy Market Operator (AEMO)—Violette will present on the changing energy landscape in Australia and the integration of distributed energy resources and renewables, empowering consumers and contributing to a reliable and secure power supply.

10.30am—11.00am *Morning Tea in the exhibition area*11.00am—12.30pm **Technology and Evolution I****Exploring High Penetration DER**—Laurie Curro, General Manager Power Systems, Horizon Power

High penetration of Distributed Energy Resources (DER) is predicted to be a more economical method of delivering energy into some microgrids than the traditional generation. Conducted over three years, and working with Murdoch University, trials are gathering a vast amount of coincident weather, network, DER and power station data as a foundation for analysis on DER performance and the subsequent impact on network operation. The presentation will provide information on the various trials at the living laboratory environment built in Carnarvon, data collection, analysis and visualisation and the engineering and social science learnings carried into Horizon Powers business practices.

Initial Lessons from St Kilda, Cambridge, a 100% photovoltaic Subdivision—Pete Armstrong, Waipa Networks, Te Awamutu, NZ

Waipa Networks has been monitoring the low voltage network impact of the St Kilda subdivision in Cambridge, where residents are required by covenant to connect at least 3kW of photovoltaic (PV) solar panels on their houses. The subdivision is still being built out, so our monitoring data and conclusions are preliminary. However, this subdivision offers a fascinating insight into the potential low voltage network impacts of 100% PV penetration and a monitoring programme has been designed to analyse and derive lessons for the future. This paper outlines the vital statistics of the subdivision, the transformer and low voltage network and the characteristics of the connected PV and network loads.

Flexing Networks for Integration of Solar PV—

Sean Elphick, Research Coordinator, University of Wollongong

In order to address some of the challenges associated with integration of large volume of small scale

Regulatory and Transmission I**Powering Sydney**—Transgrid**Interconnectors**—Transgrid

Price Signals in the NEM: Are They Working and What Are They Telling Us?—Allan O'Neil

The National Electricity Market is in the midst of unprecedented and ongoing changes to the technologies, asset mix, and range of participants responsible for meeting consumers' requirements for reliable and reasonably priced electricity while adapting to the challenges of decarbonisation. The NEM wholesale dispatch and pricing mechanism sits at the heart of the market and was designed to fulfil dual roles of optimising the short term production of power while also the providing the basis for long term investment signals ensuring ongoing reliable and economic supply. This presentation will examine recent market events and the near term and longer outlook through the prism of market price outcomes and what they tell us about the health of the NEM.

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renewable energy generators many DNSPs are seeking to 'flex' their networks beyond previous limits. Once method of 'flexing' networks is to allow a wider nominal voltage range such that there is increased headroom for the voltage swings associated with intermittent renewable energy generation. However, a major concern associated with any changes to the voltage range is how will consumer appliances connected to the distribution network respond? The paper outlines a laboratory study which examines the performance of a range of consumer appliances when supplied by a wide range of input voltages. The result of this study can be used to inform DNSPs of the impact that various voltage levels will have on the consumer appliances connected to their networks ranging from the ability of the appliances to operate as intended through to energy consumption and power quality performance.

12.30pm–1.30pm *Lunch and exhibition*

1.30pm–3.00pm

Technology and Evolution II

Virtual Utility—Alberto Costa, NSW/ACT Manager - Power & Energy, SMEC Australia Pty Ltd

The existing energy market in Australia is more complex and demanding than ever before due to changing market demands and emerging technologies. To meet these demands, the energy sector will need to transition to a new model which will see customers at the centre of the system - making timely decisions on energy usage, supported by a combination of emerging trends and technologies. In the future, virtual utilities will integrate energy services by optimising energy sourcing and managing different distribution systems, which will allow them to manage transaction costs and meet customer needs using advanced smart services platforms and applications.

Visibility and control of distributed resources and loads on a multi-directional grid—Andrew Mears, CEO, SwitchDin

In Australia and around the world, electricity systems are becoming increasingly decentralised. The rapidly growing number of grid-connected solar & battery systems present unprecedented challenges and opportunities. For energy networks, retailers and integrated utilities, visibility and control of distributed energy resources (DERs) as part of virtual power plants (VPPs) will be an important part of ensuring system security, stability and efficiency - as well as for increasing renewable energy hosting capacity. Coordinating DER operation in conjunction with on-site loads (i.e. demand management) unlocks a suite of additional tools for energy companies to realise their strategic outcomes, but will not be possible without on-site computational power (i.e. edge computing). This presentation will examine the opportunities for managing DERs in microgrid, edge-of-grid and energy market contexts, with case studies from SwitchDin's project portfolio.

Regulatory and Transmission II

Battery of the Nation—Cameron Potter, Future Energy Market Strategist, Hydro Tasmania

Project Marinus—Stephen Clark

Integration of Remote Offshore Energy with High Voltage Direct Current (HVDC)—Stephen Butler, Systems Consultants

Offshore renewable energy is a developing market. Germany is at the forefront with this, with numerous offshore wind farms, most requiring HVDC connections. These HVDC connections require an offshore converter station. Offshore converter stations present many challenges from specification all the way through to operation and maintenance. Many auxiliary systems are required, which would not be required for a standard onshore converter station. These systems range from cooling systems using sea water, to Automatic Identification Systems (AIS) used to identify the platform's position and identity to ships in the vicinity to prevent collisions. The platform is designed to be unmanned, which creates additional challenges, requiring systems to be redundant and extra resilient to prevent outages and unnecessary expensive maintenance visits to the platform. State of the art Voltage Sourced Converters (VSC) are used for their ability to control the frequency and voltage of the offshore AC grid and their black start capability. This presentation will draw on PSCs experiences working on several large offshore HVDC projects for both integration of wind energy into the grid and supplying power to remote Oil Platforms in the North Sea.

Day One: Comprehensive

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International case studies on microgrids and utility scale energy storage: Common threads to optimise systems and monetise value—Claude Morris, Microgrid Technology Leader, GHD

The following key areas will be focused on:

1. Universal and discrete drivers for microgrids and utility scale storage optimisation.
2. International case studies focusing on market trends and lessons learned.
3. Defining “optimisation” in the context of microgrids and the importance of clear target criteria and precedence.
4. Interplay between key parties with respect to risk apportionment of performance guarantees, technical and commercial barriers.

3.00pm—3.30pm *Afternoon Tea and exhibition*

3.30pm—5.00pm **Technology and Evolution III**

Impact of REFCL (Bushfire Mitigation Technology) on HV Customers—Abrar Aziz, Electrical Engineer, Middleton Group

Large sections of the Victorian electrical distribution network are located in areas of extreme bushfire risk. This requires much consideration and investment to mitigate bushfire risk. The Victorian government established the Powerline Bushfire Safety Program to develop and implement bushfire risk mitigation measures. One such measure is the deployment of a Restricted Earth Fault Current Limiters (REFCLs). REFCL is a protective device that mitigates grass and bushfire ignition through limiting fault current energy following a powerline coming into contact with earth, typically as a result of a fallen powerline. The REFCL device will be installed in the zone substation and will be owned and operated by the power utility. This device, when it operates, will impose a higher phase to earth voltages on all equipment connected to the REFCL protected high voltage (HV) circuit. This includes customers that take supply at HV. All High Voltage (HV) assets, including those owned by HV Customers, connected to a REFCL network must withstand up to 24.2kV Phase to Earth for a duration specified by the utilities. The HV customer requires to ensure all their assets are able to withstand the elevated voltages or install an isolation transformer before their point of connection which effectively isolating the plant from the overvoltage effects of REFCL. This talk reviews the options for HV customers highlighting the commercial and technical risks which allow them to undertake an informed decision for ensuring their site to be REFCL ready.

Benefits of using voltage regulating distribution transformers for grid integration of renewables - Lessons learned from first installations in Australia and New Zealand—Dr. Thomas Smolka, Business Development of VRDT, MR

The increasing amount of electrical energy being fed into the grid from dispersed generation plants is

Security

ADMS in SAPN—Travis Kauschke, Future Networks Engineer, SAPN

Building resilience for our Port Township (NZ)

Shaun Allen, Engineer, Orion Group

Phil Bunnage, Project Manager, Orion Group

Orion owns and operates the electricity distribution network that provides power to central Canterbury covering remote rural areas, regional towns and the city of Christchurch. It serves more than 200,000 customers. It has historically been supplied via a dual circuit of 11kV overhead lines, which are susceptible to adverse weather conditions and wildlife activity which in recent times, has caused significant outages to the small community town and port in Lyttelton. As part of a major upgrade of service utilities through the Lyttelton road tunnel, Orion installed an 11kV cable circuit to significantly improve the resiliency and reliability of supply to the community. This project involved the installation of a 2.2km cable circuit through the tunnel's exhaust duct, situated above the vehicle access of the tunnel. This was the longest cable pull in Orion's history as the cables needed to be continuous in length. A series of network upgrades were required to support this new cable installation.

Automated switching in Railways—John Forrest, EIIP Systems Engineering and Assurance Lead, Sydney Trains

Sydney Trains Electrical Isolation Improvement Program - upgrading Sydney Trains 1500Vdc and OHW Electrical Power Outage System to deliver safer, faster and more effective outage management. The presentation will provide an overview of Sydney Trains electrical distribution network and outage management improvement opportunities to support Transport for NSW Future Transport Strategy.

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presenting the operators of public, electrical energy supply systems with new challenges. The higher power flows by the additional feed-in are significantly increasing the need for grid reinforcement, especially in rural distribution grids. This is often needed to ensure voltage stability. Voltage Regulating Distribution Transformers (VRDT) are a possible alternative to conventional grid reinforcement in poles and wires, which is often very costly. These transformers decouple the voltage levels of the low- and medium-voltage grids, enabling better capacity utilization of the voltage band. The paper will present first results from planning, installation, and operation of the first pilot projects within Australia and New Zealand.

Quantifying the Effects of Electric Vehicles on the Tasmanian Low Voltage Network—Michael Jurasovic,
Graduate Engineer, TasNetworks

Electric vehicle (EV) uptake is forecast to increase dramatically by 2040, and this is expected to cause significant issues in the low voltage distribution network. Monte Carlo analysis was used to probabilistically analyse the effects of electric vehicles in the Tasmanian LV distribution network. The feasibility of full orchestration was investigated, whereby consumers allow their cars to be charged overnight through a central management system that allocates charging to cars such that network constraints are not violated, and we show that this is an optimistic non-build solution to EV charging under high EV penetration scenarios.

5.00pm—6.00pm *Networking Drinks and Exhibition*

6.30pm—10.00pm *Conference Dinner at L'Aqua*

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From 8.00am Morning coffee and Exhibition

8.45am—9.00am **ENA Network Transformation Roadmap** | *Jill Caine*, General Manager Networks, ENA**Leading the way: Changing the adversarial client contractor model** | *Dr Graeme Bathurst*, Vice-President (International), RXHK

- Way of working together with client
- Mutually beneficial
- Requires trust and commitment from both sides
- Engagement helps resolve and deliver
- This is what has made both of our first projects so successful and able to be delivered in such a challenging timeframe and environment
- Aggressively driving least cost does not deliver best value

9.30am—11.00am **People and Safety I****Professional development**—Mike Griffin, Chief Executive, Australian Power Institute**Safety in Design at Orion**—Alisdair Reid, Engineering Manager, Orion NZ Ltd

Orion owns and operates the electricity distribution network that provides power to central Canterbury covering remote rural areas, regional towns and the city of Christchurch. It serves more than 200,000 customers. As a life-line service, the provision of a reliable, safe power supply, and the promotion of safe and efficient use of electricity is of vital importance to the business and the community. Recent changes to Health & Safety legislation have placed greater accountability on designers and businesses to achieve safe outcomes in every aspect of their work. Orion has developed and implemented a 'Safety in Design' standard and toolset for internal and external designers, consultants and contractors to use when redesigning existing assets, designing new assets or when new types of equipment are to be added to its network. This paper describes the change process that Orion undertook to introduce stakeholders to the topic of 'Safety in Design'; how the process stimulated collaboration between designers, consultants, contractors, operators and internal staff; the key inputs and outputs from the process; and the positive impacts that have been realised by the development process and the standard.

Internal Arcs: Pressure Rise Versus Cooling Methods in Air Insulated Mv Switchgear—Mihir Maharaja, Product Manager - MV Switchgear, Eaton

When considering internal arcs in switchgear, prevention should be the main approach, both at the design stage and in service. Protection in case an internal arc does occur is step two. The protection approach consists of reducing the effects of internal arcing. In the current market this protection approach focuses mainly on reducing the arcing duration, prescribing protective wear for the operator, and/or leading the hot gases away from persons present at dedicated locations around the switchgear. However, the impact of internal arcs, like pressure rise on the surrounding switchgear room, is generally not covered by the standards. Only IEC 62271-202 considers also

Asset Management I

Understanding the past, present and future of vegetation risks on a bushfire prone electricity network with geospatial analysis—Scott McKenzie, Vegetation Manager, Endeavour Energy

Endeavour Energy and NM Group worked together to understand the dynamics of vegetation on a large, dispersed distribution network. The innovative project used spatial analysis and sophisticated model building to combine multi-year LiDAR data with many additional sources including meteorology, vegetation work patterns and actual observations of tree fall. Cloud processing enabled massive processing of these datasets and the creation of localised models. Describing where vegetation is situated, growth rate towards powerlines and potential tree hazards based on a predictive index.

Automated Medium/Large Scale Embedded Generator Site Locator: GIS Analysis. A case study of Queensland, Australia—Angel Caceres, Electrical Engineer, Hatch Pty Ltd

This study proposes a methodology which interfaces two software tools, ESRI-ArcGIS and DigSilent PowerFactory using python scripts, to optimize the evaluation of enquiries to connect renewable energy sources into the distribution network. The GIS-based approach estimates the available RE potential for large scale generation projects of Solar PV, and Wind Farms over 5MWp capacity. The proposed methodology uses ArcGIS to develop RE potential estimation maps and PowerFactory to analyse the power system and identify also the optimal DG placement in the radial distribution network. This study may help utilities as a support tool for the decision-making in the RE planning process.

Early Fault Detection prevents powerline faults and fires—Tony Marxsen, Chairman, IND Technology

In mid-2019, an Australian designed and manufactured Early Fault Detection (EFD) system completed a large-scale trial on rural SWER powerlines in Victoria after demonstrating clear fire-safety benefits. The EFD SWER Trial was a government/industry partnership covering 250 kilometres of powerlines in north-east and western Victoria. Despite the limited trial scope (coverage was less than 1% of Victoria's SWER networks) and duration (18 months), the EFD system

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the pressure rise for the closed substation with the optional IAC-B test. This paper focusses on the pressure rise outside the switchgear.

identified three previously undetected failing assets with clear fire-risk in high fire consequence locations. EFD technology is now being installed on networks in Australia, China and the USA.

11.00am—11.30am *Morning Tea and Exhibition*

11.30am—1.00pm

People and Safety II

Misleading earth resistance of meteorological masts for lightning protection—James Derricott, Principal Engineer, Zero Sequence Earthing

Based on Australian Standards for lightning protection, there is a set earth resistance that we are looking to achieve for an installation. When we test this grid, we are often testing at power system frequency, not a high frequency lightning impulse, which behaves differently. This presentation talks about these differences and how that impacts the performance of the earth grid and how to design and test to ensure the earth grid is working as advertised.

Challenges in Solar Farm HV Earthing Design

Scott Mitcherson, Senior Earthing Engineer, Zero Sequence Earthing

Design and testing of earthing systems in solar farms present new challenges to that of normal earthing designs. Remote locations, lack of auxiliary paths and scale of projects requires an open approach to primary earthing design and testing procedures of solar farms. Boundary fencing, LV supplied equipment such as CCTV cameras and buildings may require unconventional earthing solutions. Long exposure of buried HV cables near solar farm fencing is often not recognised as creating potential hazards until testing is performed.

Electromagnetic Compatibility - The Dark Magic that keeps us safe—Keith Middleton, Managing Director, Middleton Group Engineering

From being almost an afterthought in recent years, Electromagnetic Compatibility (EMC), Electrolysis, and Earthing & Bonding have emerged as critical issues within the railway network. The shift in focus has been caused by a number of drivers. Safety is a key factor as one of the major challenges with EMC is for projects to meet medical guidelines and international railway standards while also keeping Sensitive Receivers (SR) within the manufacturer's permissible DC magnetic field limits. This presentation will provide an overview of EMC, Electrolysis, and Earthing & Bonding in traction railway systems before delving into the practical considerations of mitigation techniques and strategies. Don't miss out on this unique opportunity to hear from internationally recognised experts as they uncover the dark magic and how we can all stay safe.

Asset Management II

Thermal monitoring reduces the risk of fire
Schneider Electric

Designing for resilience and inspection with AS/NZS 7000—Nathan Spencer, Director, Revo Group

As with any standard, AS/NZS 7000 aims to spell out the minimum requirements for overhead line design. This includes some aspects of durability. However, there are some additional aspects that are important for asset designers and owners to be aware of that if not considered, can make a line less resilient than intended. This presentation will explain some emerging, and some old but lesser-known techniques/concepts for designing for resilience, with a focus on multi-material pole lines. Since the resilience of a network is only as good as the maintenance/monitoring of its residual capacity, key concepts for designing for inspectability, and marriage of inspection and design criteria will also be presented.

Smart Grids for Remote Areas—John Fletcher, UNSW

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1.00pm—2.00pm	Lunch and Exhibition
2.00pm—3.15pm	Brains Trust Panel: Summary of conference content, new learnings and technology and open Q&A <div><div><i>Chris Wering</i> <i>Peter Langdon</i> <i>Patrick McMullan</i> <i>Bruce Howard</i> <i>Robert Barr</i></div><div><i>Terry Niemeier</i> <i>David Sweeting</i> <i>Simon Lewis</i> <i>Trevor Blackburn</i> <i>Denis Cooke</i></div></div>
3.15pm—3.30pm	Presentation of Prizes and conference close

General Information

Location

EECON 2019 will be held at the International Convention and Exhibition Centre – 14 Darling Drive, Darling Harbour.

The following map indicates the location. As you can see this venue is centrally located in Sydney, allows easy access from public transport and has plenty of parking onsite. For people working in the CBD it is in easy walking distance. Visit iccsydney.com.au for more venue information.

CPD points

Attendance may be credited towards Engineers Australia Continuing Professional Development (CPD) requirements. Engineers Australia members are required to undertake a minimum of 150 hours of CPD every 3 years.

Registration

To register for the conference, please register online at www.eecon2019.com.

Conditions and Cancellations

If you are unable to attend the conference, a substitute delegate is welcome at no extra charge. Where no substitute is available, a fee of \$165.00 will be deducted from your registration fee for cancellations received by 2em Pty Ltd in writing at least 28 days prior to the event.

No refunds will be made for cancellations received after 28 October 2019.

Parking

There are multiple parking stations within walking distance of the the conference venue. A few options are listed below:

ICC Sydney Carpark
14 Darling Drive, Darling Harbour
iccsydney.com.au

Wilson Harbourside Car Park
100 Murray Street, Darling Harbour
wilsonparking.com.au

Our privacy policy

By registering for this conference, relevant details will be held on a database by 2em Pty Ltd and EESA. A delegate list will be provided to all conference participants (name, position and organisation only). Information may also be made available to parties directly related to the conference including sponsors and/or exhibitors. If you do not wish your information to be used in this manner, please advise 2em Pty Ltd by email to enquiries@2em.com.au.



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