

AusNet



33rd Australasian Universities Power Engineering Conference AUPEC 2023

**Net-zero Energy Industry: Renewable Energies,
Microgrids, Hydrogen, Electrification of
Transportation and Heating**

Conference Schedule

25 – 27 September 2023

Ballarat, Australia

Conference Venue

The Goods Shed Ballarat

Webpage: <https://thegoodsshedballarat.com.au/>

Address:

200 Lydiard St N, Soldiers Hill VIC 3350

The Goods Shed Ballarat is located next to Ballarat train station and provides ample of parking spaces for who chose to drive.

You can find the layout of the Goods Shed Ballarat [here](#). The conference will take place in the [Events Hall](#), which includes the following rooms:

- 1) Terminus Theatre
- 2) Carriage Conference Rooms

Please Note: The [Conference Reception](#) and [Conference Dinner](#) will be held outside the conference venue (The Goods Shed Ballarat).

- [Conference Reception](#)

Sunday 24 September 2023 | 5.30 pm - 7.00 pm

The Sporting Globe Bar and Grill Ballarat (Rooftop Bar)

201 Mair St, Ballarat Central, VIC 3350

- [Conference Dinner](#)

Tuesday 26 September 2023 | 6.00 pm - 9.00 pm

Indian Grill @ Ballarat

602 Eureka Street, Ballarat East, VIC 3350

Pick-up and drop-off services will be arranged from the Conference Venue

Entry to the Events Hall:

For convenient access to the Goods Shed Ballarat Events Hall, please use the main car park located on Nolan Street, Soldiers Hill, situated between Quest Apartments and the multi-level car park. Enter the building through "Platform Door 12."

How to get to The Goods Shed Ballarat:

There are lots of ways to get to The Goods Shed, including:

- ✓ **Train**

Arriving by rail is simple, with Ballarat Station connected to The Goods Shed precinct. Jump on a V/Line from Southern Cross Station in Victoria's south-east (1.5hrs), Ararat in the west (1hr) and Maryborough to the north-west (1hr). More information at V/Line.com.au.

✓ **Bus**

Numerous local and V/Line buses run to and from Ballarat Station. More information at ptv.vic.gov.au or V/Line.com.au.

✓ **Car**

Parking is free at The Goods Shed. Accessible from Lydiard Street North and Nolan Street, choose between the 405 space multi-deck, or ground level parks.

✓ **Walking**

An easy 5-minute stroll up Lydiard Street North will bring you from Ballarat's CBD to The Goods Shed. Enter next to the historic red brick Carriers Hut, or via the stairs leading to the Events Plaza. Alternatively, use the main entrance on Nolan Street.

Conference Internet Access

The Goods Shed, Ballarat Proudly offers complimentary Wi-Fi access to conference delegates:

Log On Details:

Wi-Fi Network: AV Guest

Password: GoodsShed1!

Lydiard Street

Nolan Street

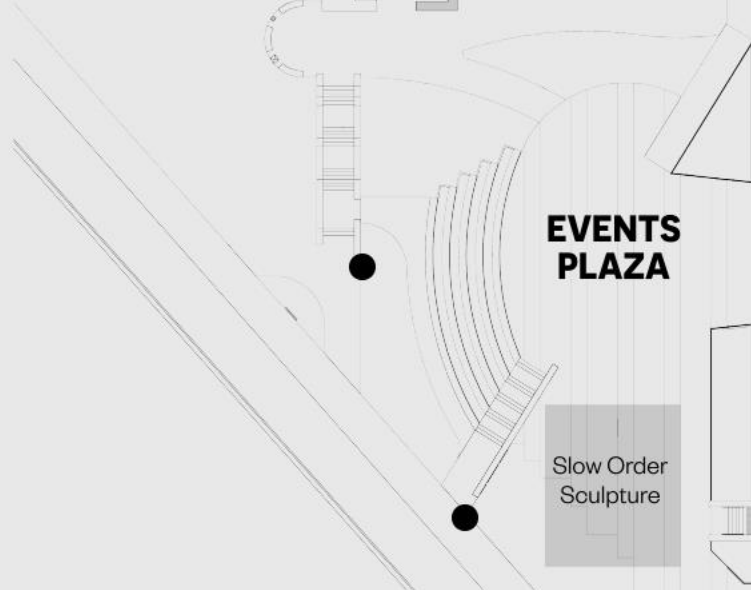


**QUEST BALLARAT
STATION**



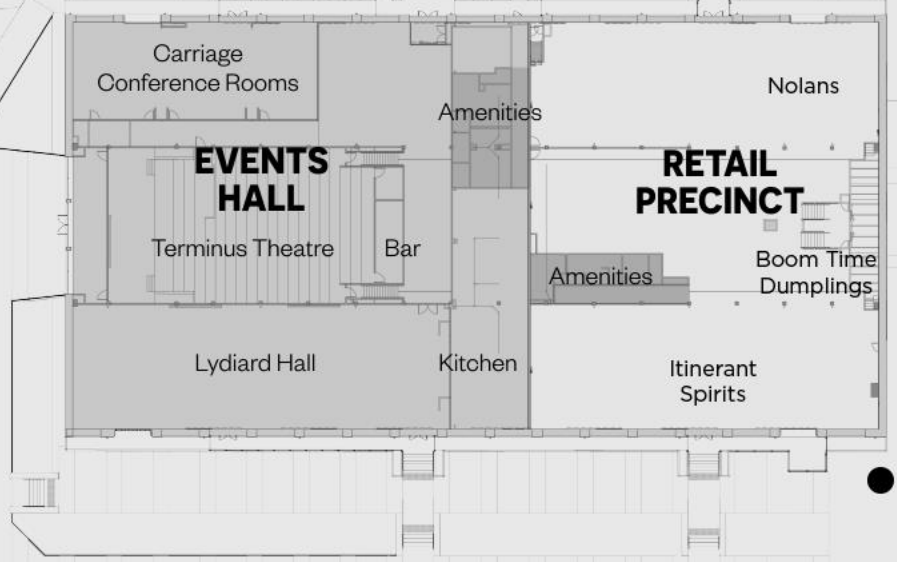
Weighbridge
North - Hut

Platform 12



**EVENTS
PLAZA**

Slow Order
Sculpture



**EVENTS
HALL**

**RETAIL
PRECINCT**

Carriage
Conference Rooms

Amenities

Nolans

Terminus Theatre

Bar

Amenities

Boom Time
Dumplings

Lydiard Hall

Kitchen

Itinerant
Spirits

Weighbridge
South - Plaque

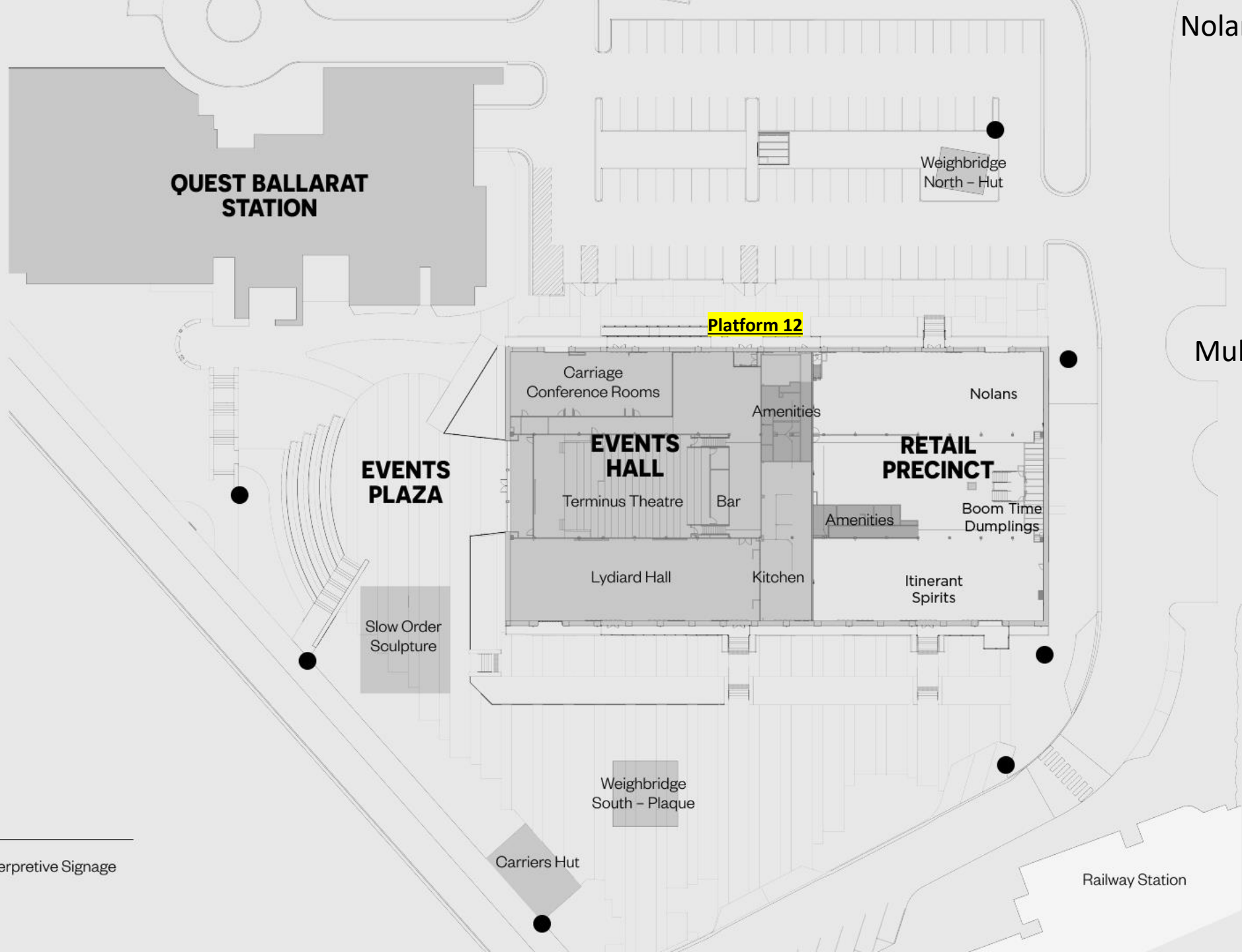
Carriers Hut

Railway Station

Multi-Level Carpark

KEY

● Interpretive Signage



FREE MULTI-DECK
PARKING

BALLARAT
STATION

FREE ON-GRADE
PARKING

RETAIL, F&B

EVENTS HALL

EVENTS
PLAZA

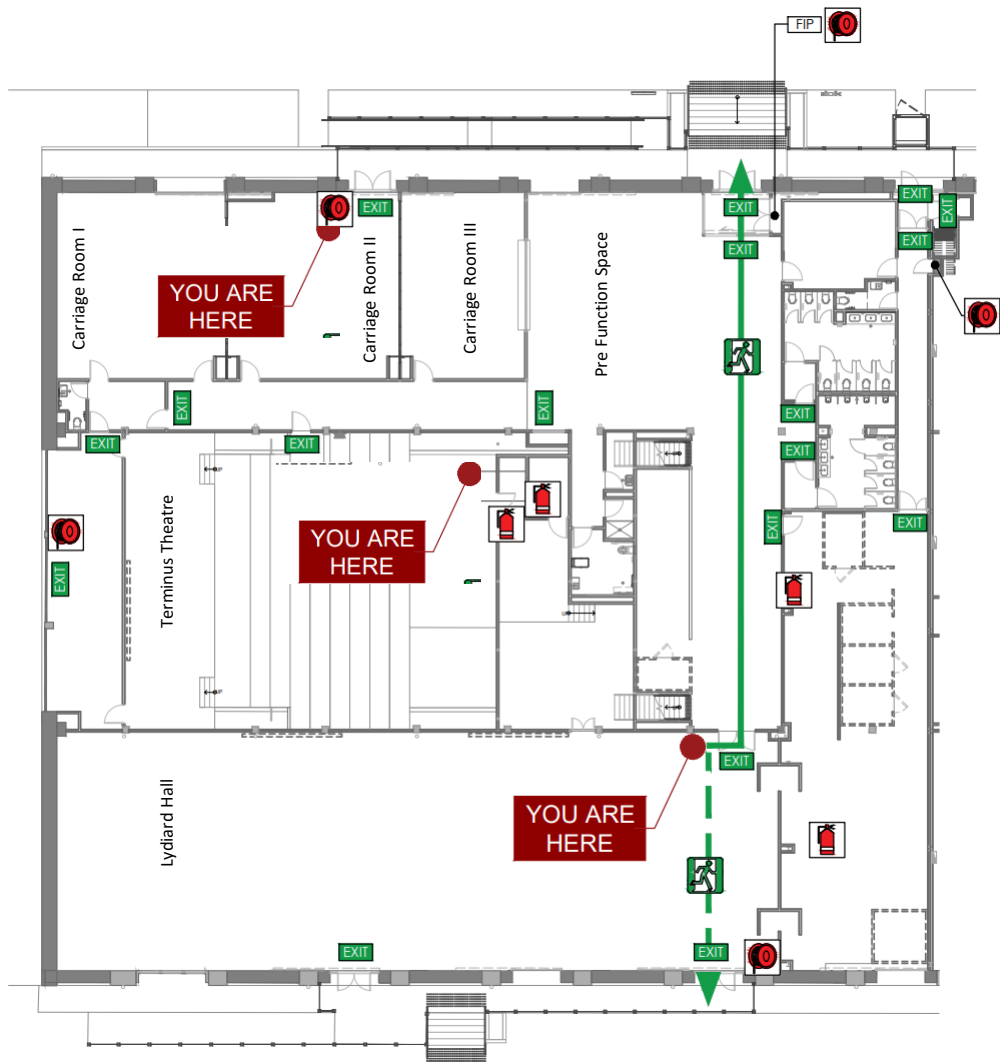
AMPHITHEATRE

QUEST BALLARAT
STATION










THE GOODS SHED

Fire Escape Plan for Each Event Space The Goods Shed, Ballarat Events Hall 2 Railway Pde, Solders Victoria 3350



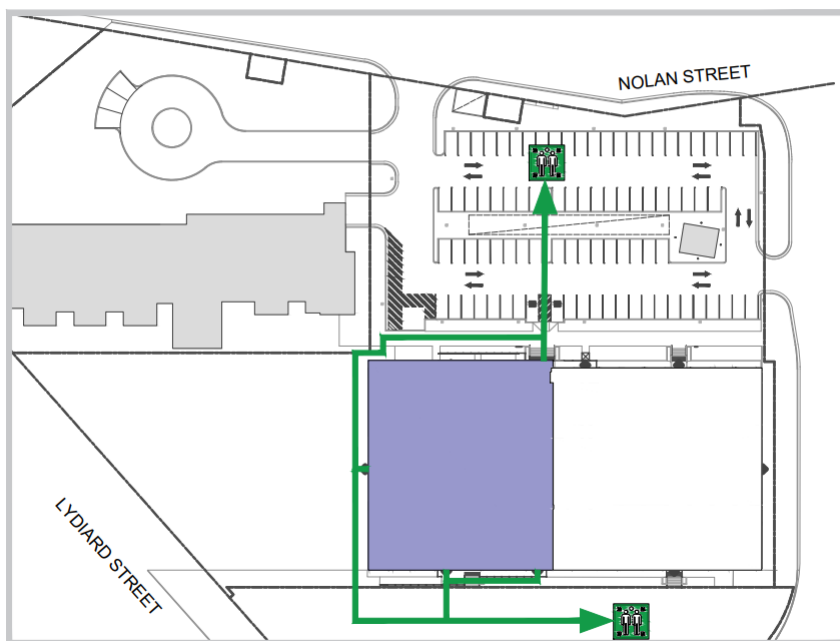
LEGEND

	FIRE INDICATOR PANEL		FIRE EXTINGUISHER
	EXIT		ESCAPE PATH
	FIRE HOSE REEL		YOU ARE HERE
	ASSEMBLY POINT		








[A]

THE GOODS SHED

Evacuation Assembly Points
The Goods Shed, Ballarat Events Hall
2 Railway Pde, Solders Victoria 3350



LEGEND

	FIRE INDICATOR PANEL		FIRE EXTINGUISHER
	EXIT		ESCAPE PATH
	FIRE HOSE REEL		YOU ARE HERE
	ASSEMBLY POINT		

EMERGENCY ACTION GUIDE

In case of Emergency

DO THIS

EVACUATION

On being given a signal to evacuate.....

1. Follow instructions as directed by a Warden or through the Building Communication System
2. Leave the building via nearest safe **EXIT**
3. Proceed to the assembly area and remain there until otherwise advised by a warden or fire officer

FIRE

1. Assist any person in immediate danger **ONLY** if safe to do so
2. Close the door
3. Call the Fire Brigade on 000
4. Attack fire **ONLY** if safe to do so
5. Evacuate to the assembly area
6. Remain at the assembly area until you are accounted for

AUPEC 2023 Reception – Sunday 24 September 2023

Venue: The Sporting Globe Bar and Grill Ballarat (Rooftop Bar)
201 Mair St, Ballarat Central, VIC 3350

Time: 5.30 pm - 7.00 pm

Day 1 – Monday 25 September 2023

Opening Session of AUPEC 2023

Time: 9.00 am - 9.30 am

Venue: Terminus Theatre, The Goods Shed, Ballarat

Professor Syed Islam - ADVC Research and Innovation, Federation University Australia

Cr Des Hudson AO - Mayor, City of Ballarat

David Pointing - CEO, The Australian Power Institute

AusNet Services Representative

Professor Nima Amjady - General Chair AUPEC 2023

Keynote Address 1

Time: 9.30 am - 10.30 am

Venue: Terminus Theatre, The Goods Shed, Ballarat

Distributed Artificial Intelligence for Modern Power System Operation and Management

Professor G. Kumar Venayagamoorthy

Duke Energy Distinguished Professor of Power Engineering and Professor of Electrical and Computer Engineering, Clemson University USA

Session Chair: Professor Syed Islam - Federation University Australia

Morning Tea

Time: 10.30 am - 10.45 am

Venue: Carriage Room, The Goods Shed, Ballarat

Paper Session 1
Power System Stability

Time: 10.45 am – 12.30 pm
Venue: Terminus Theatre, The Goods Shed, Ballarat

Session Chair:
Dr. Reza Razzaghi

Paper Session 2
Power System Planning and Operation

Time: 10.45 am – 12.30 pm
Venue: Carriage Room 1, The Goods Shed, Ballarat

Session Chair:
A/Professor Lasantha Meegahapola

Paper Session 3
EV and PV Uptake in Australian and International Experience

Time: 10.45 am – 12.30 pm
Venue: Carriage Room 2, The Goods Shed, Ballarat

Session Chair:
Dr. Elizabeth Ratnam

Lunch Day 1

Time: 12.30 pm - 1.00 pm

Venue: Carriage Room, The Goods Shed, Ballarat

Paper Session 4 Cyber Security and AI Application in Power System	Paper Session 5 Power System Dynamics and Control I	Paper Session 6 Remote and Resilient Power System
Time: 1.00 pm – 2.30 pm Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat	Time: 1.00 pm – 2.30 pm Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat	Time: 1.00 pm – 2.30 pm Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: A/Professor Gour Karmakar	Session Chair: Dr. Kazi Hasan	Session Chair: Professor Saad Mekhilef

Tutorial 1 DER, distribution networks and market interactions: techno-economic modelling and studies	Tutorial 2 Power System Stability with High Penetration of Inverter-based Generators
Time: 2.30 pm – 3.30 pm Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat	Time: 2.30 pm – 3.30 pm Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Professor Pierluigi Mancarella, Chair, Power, and Energy System Group Department of Electrical and Electronic Engineering The University of Melbourne, Australia	A/Professor Lasantha Meegahapola Dr. Kazi Hasan, RMIT University, Melbourne, Australia
Session Chair: Professor Nima Amjady	Session Chair: Professor Akhtar Kalam

Afternoon Tea
Time: 3.30 pm - 3.45 pm
Venue: <u>Carriage Room</u>, The Goods Shed, Ballarat

API Women in Engineering Forum
Time: 3.45 pm - 5.00 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Panel Chair: Dr. Maria Vrakopoulou Department of Electrical and Electronic Engineering, The University of Manchester
Panel Co-Chair: A/Professor Surbhi Sharma Centre for New Energy Transition Research, Federation University Australia

Day 2 – Tuesday 26 September 2023

Industry Day

Keynote Address 2

Time: 9.00 am - 10.00 am

Venue: Terminus Theatre, The Goods Shed, Ballarat

Net Zero Ballarat by 2030

Mr. Michael Poulton - Committee for Ballarat

Session Chair: Professor Syed Islam - Federation University Australia

Industry Panel Session 1

Enhanced System Planning Victoria

Time: 10.00 am - 11.00 am

Venue: Terminus Theatre, The Goods Shed, Ballarat

Panel Chair: Ruchika Deora - Centre for New Energy Technologies (C4NET)

Morning Tea

Time: 11.00 am – 11.20 am

Venue: Carriage Room, The Goods Shed, Ballarat

Industry Panel Session 2

Renewable Energy Zone in Western Victoria: Opportunities and Challenges

Time: 11.20 am – 12.30 pm

Venue: Terminus Theatre, The Goods Shed, Ballarat

Panel Chair:

Stuart Benjamin - Regional Development Australia

Representatives from the Australian Energy Market Operator

Lunch Day 2

Time: 12.30 pm - 1.30 pm

Venue: Carriage Room, The Goods Shed, Ballarat

ACPE Member Meeting (Restricted to ACPE members)

Time: 12.30 - 1.30 pm

Venue: Carriage Room 1, The Goods Shed, Ballarat

Panel Session

Net Zero Transition and Climate Extreme

Time: 1.30 pm - 2.30 pm

Venue: Terminus Theatre, The Goods Shed, Ballarat

Panel Chair: A/Professor Savin Chand - Federation University Australia

API Industry Forum

Future Energy Education and Challenges: What are requirements by the industries

Time: 2.30 – 3.30 pm

Venue: Terminus Theatre, The Goods Shed, Ballarat

Panel Chair: David Pointing – The Australian Power Institute

Afternoon Tea
Time: 3.30 pm – 4.00 pm
Venue: <u>Carriage Room</u>, The Goods Shed, Ballarat

<u>Industry Session 1</u> Arc Flash Mitigation	<u>Industry Session 2</u> Substation Automation
Time: 4.00 pm – 5.00 pm	Time: 4.00 pm – 5.00 pm
Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat	Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Shantanu Kumar - BHP, Australia	Alan Teixeira - ABB, Australia

Dinner (AUPEC 2023) #
Time: 6.00 pm - 9.00 pm
Venue: Indian Grill @ Ballarat 602 Eureka Street, Ballarat East, VIC 3350

Pick-up and drop-off services will be arranged from the Conference Venue.

Day 3 - Wednesday 27 September 2023 (Hybrid Day – For Overseas Authors’ and Keynote Speaker)

Keynote Address 3
Time: 9.00 am - 10.00 am
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Grid Interactive Inverters for the Future Grid
Professor Iqbal Husain
Director FREEDOM Centre, North Carolina State University, USA
Session Chair: Professor Saad Mekhilef – Swinburne University of Technology

Morning Tea
Time: 10.00 am - 10.15 am
Venue: <u>Carriage Room</u>, The Goods Shed, Ballarat

<u>Paper Session 7</u> Transmission and Distribution System	<u>Paper Session 8</u> Power System Dynamics and Control	<u>Paper Session 9</u> Electrical Machine and Drives
Time: 10.15 am – 12.00 pm	Time: 10.15 am – 12.00 pm	Time: 10.15 am – 12.00 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat	Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat	Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: Dr Jiajia Yang	Session Chair: Dr Nikhil Pathak	Session Chair: Professor Youguang Guo

Lunch Day 3
Time: 12.00 pm - 12.30 pm
Venue: <u>Carriage Room</u>, The Goods Shed, Ballarat

<u>Paper Session 10</u> Smart Grid, Cities and Buildings	<u>Paper Session 11</u> Microgrid System	<u>Paper Session 12</u> Net-zero Transition, Hydrogen and Beyond
Time: 12.30 pm – 2.15 pm	Time: 12.30 pm – 2.15 pm	Time: 12.30 pm – 2.15 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat	Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat	Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: Dr BM Ruhul Amin	Session Chair: Dr Ramesh Bonu	Session Chair: A/Professor Surbhi Sharma

Afternoon Tea
Time: 2.15 pm – 2.30 pm
Venue: <u>Carriage Room</u>, The Goods Shed, Ballarat

AUPEC 2023 Closing Session
Time: 2.30 pm - 3.00 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat

Day 1 – Monday 25 September 2023

Paper Session Details

Paper Session 1
Power System Stability
Time: 10.45 am – 12.30 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Session Chair: Dr Reza Razzaghi
Impact of System Strength and Control Parameters on the Small-Signal Stability of Grid Following and Grid Forming Inverters Hankun Cui, Feifei Bai and Yi Cui
Impact of Load Modelling on Reactive Power Margin Measured in Probabilistic Voltage Stability Analysis Mohammed Alzubaidi, Kazi N. Hasan, Ali M. Hakami and Lasantha Meegahapola
Investigating Efficient Probabilistic Modeling Technique for Frequency Stability Analysis of Future Power Systems Ali M. Hakami, Mohammed Alzubaidi, Kazi Hasan and Manoj Datta
Comparison of MPC and M2PC for an Indirect Matrix Converter in a DFIG Drive Application Nicolas Gonzalez, Marco Rivera and Galina Mirzaeva
Fixed Switching Frequency Model Predictive Control for Parallel Inverters in Microgrids Fernanda Carnielutti, Mokhtar Aly, Margarita Norambuena, Jiefeng Hu, Josep Guerrero and Jose Rodriguez

Paper Session 2
Power System Planning and Operation
Time: 10.45 am – 12.30 pm
Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat
Session Chair: A/Professor Lasantha Meegahapola
Smart Interconnection Method for Integrating Two Microgrids Shameem Ahmad, Lilik Jamilatul Awal, Jannatul Ferdous Riya, Agm Mustayen Billah, Tofael Ahmed, Saad Mekhilef, Hazlie Mokhlis, Mehdi Seyedmahmoudian and Alex Stojcevski
Integrated Whole-System Plan: An Electricity-Hydrogen Victorian Case Study Ronggen Chen, Sleiman Mhanna, Isam Saedi and Pierluigi Mancarella
Comparative Analysis of System Strength Indices in Weak Electrical Grids Louis Goonasekara, Habib Almosaied and Lasantha Meegahapola
Effectiveness of Local Voltage Management Services in Unbalanced LV Networks: A Techno-Economic Study Lucas Quiertant, James Naughton, Sleiman Mhanna, Carmen Bas Domenech and Pierluigi Mancarella
Improving Frequency Regulation in Power Systems via NoisyNet Deep Reinforcement Learning Approach Boming Zhang, Xinan Zhang, Tat Kei Chau and Herbert Lu

Paper Session 3
EV and PV Uptake in Australian and International Experience
Time: 10.45 am – 12.30 pm
Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: Dr Elizabeth Ratnam
Converting multiple propagating wave energy to wireless energy transfer to charge low powered cellular devices flat-battery on an emergency situation where charging point is unavailable Berhane Gebreslassie, Akhtar Kalam and Aladin Zayegh
Empirically Informed Approach to Output Filter Design for Wide Bandgap Motor Drive Systems Thomas Moukas, David Klink, Malhar Palkar, Greg Heins and Behrooz Bahrani
Electric Vehicle Charging Identification and Profiling Using Australian Residential Smart Meter Data Mir Toufikur Rahman, Kazi N. Hasan and Gary Rosengarten
Assessment of Harmonic Emissions from Small-Scale PV Inverters when Connected to a Distorted Supply Sean Elphick, Duane Robinson and Jonathan Knott
A Comparative Study of Three Meta-Heuristic MPPT Techniques for PV Systems Under Complex Partial Shading Conditions Abdulbari Talib Naser, Karam Khairullah Mohammed, Nur Fadilah Ab Aziz, Karmila Binti Kamil and Saad Mekhilef

Paper Session 4
Cyber Security and AI Application in Power System
Time: 1.00 pm – 2.30 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Session Chair: A/Professor Gour Karmakar
Blended Ensemble Learning for Robust MITM Attack Detection and Classification in Smart Grid Sakib Shahriar Shafin, Quazi Ashiqur Rahman, Iqbal Gondal, Gour Karmakar and M. Rubaiyat Hossain Mondal
Software-Defined Access Control in Smart Grids Gour Karmakar, Ranesh Naha, Rakibuzzaman Shah, Joarder Kamruzzaman and Rajkumar Das
Sky Image-Based Ultra-short-term Photovoltaic Generation Forecasting with Vision Transformer Shijie Xu
The Necessity of Stakeholder-Centric Dynamic Operating Envelopes in Distribution Networks Ashish Kumar Karmakar, Bjorn Sturmborg, Sam Behrens and Hemanshu Pota
Comparative Analysis of Regression Models for Household Appliance Energy Consumption Prediction using Extreme Gradient Boosting Tung Vu, Gokul Sidarth Thirunavukkarasu, Mehdi Seyedmahmoudian, Saad Mekhilef and Alex Stojcevski

Paper Session 5
Power System Dynamics and Control I
Time: 1.00 pm – 2.30 pm
Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat
Session Chair: Dr Kazi Hasan
Enhanced Active Power Improvement in Wind Energy Conversion Systems through Rotor Side Converter Current Control of Doubly Fed Induction Generator Muhammad Adnan Khan, Muhammad Waseem, M. Asim Amin, Muhammad Arslan, Muhammad Ali Mughal and Kazi Nazmul Hasan
Influence of Discontinuous Modulations on DC Capacitor Power Dissipation and Lifetime in Cascaded H-Bridge StatComs Qingxiang Liu, Ezequiel Rodriguez, Glen Farivar, Christopher Townsend, Ramon Leyva, Josep Pou and Jose Rodriguez
Potential Challenges and Some Solutions for the Futuristic 2030 Scenario of Queensland Power System Network Phuong Nguyen, Nikhil Pathak, Tapan Saha, Richard Yan
Planning, Scheduling and Dynamic Analysis of Renewable Integration into Mining Networks Aobo Zhou, Richard Yan, Tapan Kumar Saha, and Bonu Ramesh Naidu
Modelling and Predictive Control of Solar PV based Microgrid in Stand-alone Mode Sana Fazal, Md Enamul Haque, Mohammad Arif, Ameen Gargoom and Jiefeng Hu

Paper Session 6

Remote and Resilient Power System

Time: 1.00 pm – 2.30 pm

Venue: Carriage Room 2, The Goods Shed, Ballarat

Session Chair: Professor Saad Mekhilef

A Case Study on the Energy Consumption Behaviour in Western Victoria for Implementing Demand Flexibility

B M Ruhul Amin, Rakibuzzaman Shah, Nima Amjady and Syed Islam

Data-driven Modelling of Representative Rural Distribution Networks for Reliability Studies

B M Ruhul Amin, Rakibuzzaman Shah, Nima Amjady and Syed Islam

Hydrogen and other bioenergy fuels for Australia's Net-Zero Strategy: a critical review

Anirudh Singh and Dhrishna Charan

Real-time Power Regulation of Flexible User-side Resources in Distribution Networks Via Dual Ascent Method

Yu Yang, Fushuan Wen, Jiajia Yang, Hangyue Liu, Dazheng Liu, Shujun Xin, Hao Fan and Cong Wu

Time-Based Scheduling Optimization for HVAC Control: A Case Study on Enhancing Energy Efficiency in Commercial Buildings

Gokul Sidarth Thirunavukkarasu, Ali Raza Kalair, Md Didarul Islam, Mehdi Seyedmahmoudian, Saad Mekhilef and Alex Stojcevski

Day 3 – Wednesday 27 September 2023

Paper Session Details

Paper Session 7
Transmission and Distribution System
Time: 10.15 am – 12.00 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Session Chair: Dr Jiajia Yang
Privacy-Preserving Demand Response Framework: Prime Dual Method of Multipliers Jamshid Aghaei and Mousa Afrasiabi
Predicting Stability Boundary of a Single-phase Grid-tied Inverter using Small-signal DQ-Frame Model Brendan McGrath, Raunak Agrawal, Carlos Teixeira and Richardt Wilkinson
A Model-Free Deep Reinforcement Learning-Based Approach for Assessment of Real-Time PV Hosting Capacity Jude Suchithra, Duane Robinson and Amin Rajabi
Composite high voltage source for instrument voltage transformer frequency response evaluation up to 10 kHz Imanka Dewayalage, Duane Robinson, Sean Elphick and Sarath Perera

Paper Session 8
Power System Dynamics and Control
Time: 10.15 am – 12.00 pm
Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat
Session Chair: Dr Nikhil Pathak
Development of a Reverse Power Flow Identification and Under Frequency Load Shedding Scheme Load Anticipation Algorithm Reilly Morrison and Narottam Das
Improvement in Arc Flash Protection Based on IEC 61850 Protocol Shantanu Kumar, Ahmed Abu-Siada, Narottam Das and Syed Islam
Modeling and Stability Analysis of Grid-Connected VSC Considering Alternating-Voltage Control Nilanjan Mukherjee
Detection of broken strand in overhead conductors using partial discharge detection method Jiali Zhang, K. L. Wong and M. G. Danikas

Paper Session 9
Electrical Machine and Drives
Time: 10.15 am – 12.00 pm
Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: Professor Youguang Guo
A Direct Drive Rotary Valve for Efficient Power Generation in Gas Expander Based Small Scale Power Plants Md Shazzad Hossain, Truong Phung, Apurv Kumar and Ibrahim Sultan
Design and optimisation of PE-ORC power production systems Christopher Belfiore, Truong Phung, Linh Nguyen and Ibrahim Sultan
Life Extension Feasibility Study of a Combined Cycle Power Plant Scott Webster, Narottam Das and Muhammad Saiful Islam
Robust Torque Control for Induction Motor Drives Using Fuzzy and PID Control Morteza Azim Nasab, Sanjeevikumar Padmanaban, Mohammad Zand, Mohammadhossein Abedinzadeh, Pandav Kiran Maroti and Mohammad Ali Dashtaki

Paper Session 10 Smart Grid, Cities and Buildings
Time: 12.30 pm – 2.15 pm
Venue: <u>Terminus Theatre</u>, The Goods Shed, Ballarat
Session Chair: Dr BM Ruhul Amin
A Deep Concurrent Learning-based Robust and Optimal Energy Management Strategy for Hybrid Battery Systems in Electrical Vehicles: A Thermal- And Health-Aware Design Approach Nilanjan Mukherjee
Challenges of Sustainable Solar Power Generation in Small Tropical Island Nations Such as Fiji Island Akshay Sahay, Andreas Helwig, Ziyad Abunada and Narottam Das
A Heuristic Technique for EV Hosting Capacity Enhancement in Power Distribution Network Quazi Ashiqur Rahman, Abdul Hasib Chowdhury and Rakibuzzaman Shah
Machine Learning Based Coordination for IDMT Overcurrent and Earth Fault Relays Sultan Uddin Khan, Md Shazzad Hossain and Ibrahim Sultan

Paper Session 11 Microgrid System
Time: 12.30 pm – 2.15 pm
Venue: <u>Carriage Room 1</u>, The Goods Shed, Ballarat
Session Chair: Dr Ramesh Bonu
Novel Instantaneous Power Control Scheme for Hybrid Microgrid Application Dr. Buddhadeva Sahoo, Dr. Subhransu Ranjan Samantaray and Dr.Pravat Rout
Impact of multiple grid connected solar PV inverters on harmonics in high-frequency range Kasun Peiris, Sean Elphick, Jason David and Duane Robinson
DC to AC Inverters for Solar Panel Ashwanth Vitoba Prabakar, Rakshaya Nm, Akthar Kalam and Jamuna K

Paper Session 12 Net-zero Transition, Hydrogen and Beyond
Time: 12.30 pm – 2.15 pm
Venue: <u>Carriage Room 2</u>, The Goods Shed, Ballarat
Session Chair: A/Professor Surbhi Sharma
A 3D Numerical Model to Estimate Lightning Types for PyroCb Thundercloud Surajit Das Barman, Rakibuzzaman Shah, Syed Islam and Apurv Kumar
Decarbonisation Begins at Port: Hydrogen Technologies for Electrifying Australian Ports Surbhi Sharma, Ayon Chakraborty and Navneet Soin
Review and development of WorkSafe (WA) Regulatory Compliant Pressure Equipment Asset Management Plans Glenn Partridge and Muralitheran V Kanagarajoo