Why Auckland

Inspired choice

As New Zealand's largest city, Auckland is the country's financial and economic powerhouse, and the gateway to the rest of the country. The modern city centre is surrounded by sparkling harbours, native forest, beautiful beaches and scenic wine regions.

Smart choice

Auckland is a thriving high-tech hub of the Asia-Pacific region, home to more than 20,000 innovation-based companies. Auckland Convention Bureau can access experts across business, industry, tertiary and research institutions, making the city the perfect choice for international delegates to connect and collaborate..

A world of choice

Auckland's Polynesian flavour—including its unique Māori culture—is a major attraction for international visitors; and an abundance of activities and adventures on Auckland's doorstep will excite your delegates.

IEEE
New Zealand North

ORGANIZING COMMITTEE
eGrid 2022

Nirmal Nair
General Chair

Kate Murphy
General Co-Chair

Waqar Qureshi
Industry Chair

Nyuk-Min Vong
Industry Co-Chair

Tek Tjing Lie
Technical Chair
Finance Chair

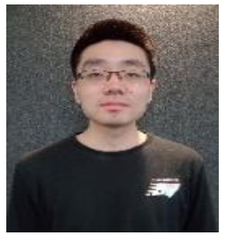
Ramesh Rayudu
Technical Co-Chair

Andrew Lapthorn
Student Activities Chair

Seho Kim
Student Activities Co-Chair

Rizki Rahayani
Social Activities Chair

Abhinav Rakesh Chopra
Young Professionals
Activities Chair



Xin Liu
Creative Head
Social Activities Co-Chair

Lakshita Lakshita
Women in Engineering
Activities Chair

Conference website:
https://egrid2022.com/

Paper Submission Link:
Easy Chair Manuscript Submission Site

Technical Enquiries:
egrid2022@gmail.com

GRID 2022

29 Nov - 2 Dec | Auckland, New Zealand

Call for Panels and Papers

IEEE PES Power & Energy Society™

Future Electricity Architecture to Enable Zero-Carbon Economy

pels IEEE POWER ELECTRONICS SOCIETY

The 7th IEEE Workshop on the Electronic Grid (eGrid 2022) will be held 29 NoV-2 Dece, 2022. This workshop is jointly sponsored by IEEE Power Electronics Society (PELS) and IEEE Power & Energy Society (PES). With the increasing applications of power electronics in the power grid, the two independent areas are integrated more closely. eGrid provides an international forum for academics and industry in the field of electronic grid to exchange information on their latest research ideas, progresses, developments, experiences, achievements, state-of-art technical trends, and applications.

The previous eGrid workshops have been held with great success in Hefei China (eT&D 2016), Aalborg Denmark (eT&D 2017), Charleston USA (eGrid 2018), Xiamen China (eGrid 2019), Aachen Germany (eGrid 2020), and USA (eGrid 2021). Accepted papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements.

E Grid 2022 will includes 4-day themed panels, presentations and posters focusing on:

- Green Energy Technologies
- The future workforce to support deeper renewable electrification
- Innovations and start-ups to support AC/DC Hybrid Grid end-to-end operation
- Technical challenges for addressing planning, operation of and maintaining the Hybrid grid

CALL FOR P&P

New Zealand's Future Electricity Architecture to Enable Zero-Carbon Transitions:

High penetration of DC transmission and distribution (conveyance) into the AC grid will provide many benefits to transition to a low-carbon power system. The major research challenge is to determine the future architecture, topology and a transition pathway, which this workshop aims to achieve through discussion with global industry participants and research and academic organisations.

IEEE
New Zealand North

IEEE

Topics of interest include but are not limited to:

EGrid Advances: Power Electronics in Transmission and Distribution

- AC and DC distribution, smart grid, mini-, micro-/nano-grid
- Intelligent substation, interface to HV and LV AC and DC grids
- Grid monitoring and control
- Power converters for power quality
- Power electronics for sector coupling and EV fast (DC) charging infrastructure
- Highly efficient power conversion for DC and renewables
- Solid state protection devices, switch gear
- Grid forming, Grid Supporting and Grid Following Technologies and Architectures

Emerging Utility: Grid Planning, Control, Automation and Security Architectures

- Tools to plan hybrid grids and DC distribution grids
- Integration of Renewable Energy Resources (100% renewable Grids)
- Control, communication and monitoring of renewable energy systems
- Cybersecurity and Privacy
- Demand side management, integration of storage systems
- Integration of DC loads, DC factories, DC buildings, EV fast charging
- Protection of multi-terminal hybrid and DC grids
- Cyber-physical resilience for electricity infrastructure

Digitalization: Smart Grid, Smart Village and Smart Cities

- Energy-technology platform for smart process heat decarbonisation
- Technology developments and research in the field of green hydrogen energy.
- Time-Evolving Data Science for open environmental science
- Data collection, management & sharing for smart cities
- IoT Applications for smart cities etc.
- IT, OT, and Telecommunications – Design Principles
- Telecommunication for Remote Monitoring and Disaster Risk Reduction
- Low-power wireless technologies
- Emerging techniques and applications for wireless power transfer
- Engineering wireless power into roadways
- IEC 61850 for secure and scalable electricity infrastructure integration
- Operation and planning for LVDC homes.
- Mapping the energy innovation ecosystem in the smart cities.
- Innovations to investigate new energy solutions for a low-carbon future

Enabling Decentralization: Future Regulatory and Standards

- Zero-Carbon Economy Transition Policy
- Climate Change Adaptation and Mitigation Technologies
- Social acceptance of new grid technologies
- Business models, flexibility-merit-order, diffusion of new technologies
- Regional aspects and regulatory aspects
- Multiple trading relationships for electricity market
- MV and LV DC standardization activities (CIGRE, IEC, IEEE)

Mobility Dynamics: Electrification and Automation of Vehicular Technologies

- Applications to dispatch and control vehicles, mobile radiotelephone, radio paging, and status monitoring and reporting
- Digital modulation and transmission techniques, mobile radio circuit design, radio propagation for vehicular communications
- Effects of ignition noise and radio frequency interference, and consideration of the vehicle as part of the radio operating environment
- Automated transport systems, with single and multiple vehicle control
- Electronic controls for engineer, drive train, convenience, safety, and other vehicle systems
- Vehicle electrical components and systems collision avoidance systems

Resilience: Seismic, Volcanic and High-Impact Weather (wildfire, Hurricane, Heatwave, flooding etc.) Events

- Distributed infrastructure technologies under a range of plausible forward-looking scenarios for earthquake
- Electrification and autonomous transport around physical IoT
- Sensing society through the IoT for different infrastructure resilience
- Holistic assessment of the diverse impacts due to seismic events
- Risk assessment for power system's resilience against weather scenarios
- Resilience and robustness improvement to address power grid weatherization

Workforce Development, Diversity & Inclusion; Indigenous Knowledge; Energy Equity & Justice

- ***Vision Mātauranga*** Unlocking the Innovation Potential of Māori Knowledge, Resources and People
- Technologies and solutions for renewable energy for Māori and public housing in Aotearoa
- Data, Text, Web Mining, & Visualization
- Crowd Sourcing & Social Intelligence
- Human-Machine Interaction
- Renewable Energy poverty
- Energy Equity and Justice

Important Dates

Papers Submission

Submission Deadline ~~**10 September 2022**~~ **24 September 2022**
Acceptance Notification **15 October 2022**
Camera Ready Submission: **18 November 2022**

Panel Proposals (Venue Based)

Proposal Deadline **10 September 2022**
Decision Notification **10 October 2022**

IEEE New Zealand North

IEEE PES Power & Energy Society™

pels IEEE POWER ELECTRONICS SOCIETY

THE UNIVERSITY OF AUCKLAND Te Whare Wānanga o Tāmaki Makaurau NEW ZEALAND

Auckland Unlimited