

# NATIONAL BULLETIN Bulletin 12 | 2021

# SEASON'S GREETINGS FROM THE EESA NATIONAL COUNCIL

### By Jeff Allen, National President of the Electric Energy Society of Australia | December 2021

Looking back, 2021 was again a very "eventful" year for all of us when you consider the impact that COVID 19 continued to have on all of us to varying degrees across Australia. EESA continued to deliver national webinars and some local face to face events (which were also streamed across Australia) and as a result, all our members enjoyed access to CPD hours. Our new website also allowed members to access recordings of these at any time. Also – individual membership has increased to approximately 1200 and we have had a great increase in corporate members of EESA in 2021.

We recently had our annual elections for some members of our National Council. See the following article for a little background on all the members of our "new look" 2022 National Council. It is great to see the diversity in age, gender, and experience on the National Council.

In 2021 EESA members have been updated on the many changes occurring in the electric energy area by the many detailed articles that have appeared in the EESA Bulletin each month as well as the many webinars, a few seminars and our very successful EECON 2021 which was a "hybrid" of in person and online attendance. These events have been organized by EESA chapters and our affiliate organizations. A big thank you to all who have been involved in making all this happen in 2021.

The National Council has great plans for EESA in 2022 for the benefit of all EESA members across Australia.

To you and you families – have a great festive season – and we trust that 2022 will be a successful year for everyone.



Jeff Allen, National President of the Electric Energy Society of Australia

#### Affiliations













# CONTENTS

MEET THE 2022 NATIONAL COUNCIL	Page 3
EECON 2021 HIGHLIGHTS AND LEARNINGS	<u>Page</u> 6
RECAP OF THE PRE-CONFERENCE TOUR HELD ON SUNDAY 21 NOV	Page 12
EECON 2021 NATIONAL UNIVERSITY POSTER PAPER COMPETITION REPORT	Page 16
EECON SPONSOR & EXHIBITOR ACKNOWLEDGMENT	Page 19
PETER DULHUNTY BECOMES A FELLOW MEMBER OF EESA	Page 20
EECON 2022 ANNOUNCEMENT	Page 21
UPCOMING EVENTS	Page 22
CORPORATE MEMBER ACKNOWLEDGMENT	Page 23



# **MEET THE 2022 NATIONAL COUNCIL**

#### Jeff Allen (NSW/ACT Chapter) National President of the Electric Energy Society of Australia

Jeff was elected as National President (for 3 years) after being elected to the National Council in the 2019 popular vote. Jeff graduated from Sydney University as an electrical engineer in 1967 and worked in system control, then engineering design and executive management at Prospect Electricity. Illawarra and Prospect merged to form Integral Energy and he became chief executive of Integral for 2 years, then became a consultant. He also worked for various types of companies in executive roles including IT, equipment manufacturing, and a start-up called Energy Action. Jeff has been a member of EESA since 1977. As National President he is committed to growing EESA across Australia and ensuring EESA members get a great range of services to meet their CPD needs.



### Abrar Aziz (Vic Chapter) Victorian Chapter Chair and National Communications and Marketing Coordinator

Abrar grew up in Bangladesh and came to Australia in 2012 to study engineering at Deakin University in Geelong. He is currently working on the Victorian roll-out of bushfire mitigation technology as well as leading design delivery work for large infrastructure projects across Australasia for the Middleton Group. He was awarded the 2019 young electrical power engineer of the year award, a national award recognizing significant achievements in electrical power engineering during the preceding six years.

### Akshay Bijarnia (Vic Chapter) Assistant National University Liaison Coordinator

Akshay graduated as an Electrical Engineer from Victoria University in 2016 and is the Victorian Regional Manager and Earthing Engineer with Zero Sequence Earthing. He specialises in the design and testing of earthing and lightning protection systems for power generation, utility, and industrial projects. Akshay joined EESA's Victorian Chapter in 2020 when he saw an opportunity to better bridge the gap between university graduates and working engineering professionals and has been actively working to address this by organising local events and recruiting student memberships. He joined the National Council as the "Young Professional" representative in November 2021.



### Jack Broughan (Tas Chapter) Tas Chapter Chair Representative and Assistant Engineering Information Sharing Coordinator

Graduating from the University of Tasmania with a degree in Mechatronics Engineering in 2020, Jack started his career in the power industry working at Hydro Tasmania. Currently he is a part of the Hydro Tasmania graduate program where he is working his way through the different engineering sectors within the business to gain a broader understanding of the power system. Jack got involved with EESA, with the goal to help broaden his knowledge within the electrical field so he can help educate others and become a better engineer.





# **MEET THE 2022 NATIONAL COUNCIL**

### Frank Crisci (SA/NT Chapter) National Mentoring Coordinator

Frank Crisci is Manager Emergency Management at SA Power Networks. He has a B.E. (Hons) (University of Adelaide), MBA (University of Adelaide) and a Master of Emergency Management (Charles Sturt University). Frank has spent 40 years in power industry and his key achievements include project management of a 4-year program to convert bare conductor to insulated conductor, the establishment of the Network Operations Centre for SA Power Networks, the development of SA Power Networks' Bushfire Risk Management programs and a Cost-Benefit Analysis tool to evaluate bushfire risk mitigation options. He was a founding member of the SA Chapter from 2002, a committee member since 2005 and was appointed as a Fellow member of EESA in 2020. Frank was appointed to the vacant "2022 popularly elected position" as a "corresponding member".

### Russell Ellen (WA Chapter) WA Chapter Chair and National Membership Coordinator.

Russell qualified as an electrical engineer through RMIT Melbourne. He recently retired from ABB after about 40 years. His longest job has been working on their transformer business in Australia, and 10 years overseas in different countries. He worked in head office in Switzerland for 5 years, then came back to Australia in 2012. He was involved at the start of EESA and served as the first national president until 2004 before going overseas for 10 years. After coming back to Australia, he resumed the WA chapter of EESA, which had been in recess. He has been the WA chapter chair since it resumed in 2014.

### Natalie Hutchinson (Vic Chapter) National Council Member (2022 popular vote) and Assistant National Treasurer

Natalie Graduated from the University of Melbourne with degrees in Science and Electrical Engineering in 2006. She has spent the past 15 years working for various companies in the Electrical Building Services Engineering sector. Natalie joined the Victorian Chapter of EESA in 2014 and shortly after that she joined the EESA National Council. She has been the Victorian Chapter Treasurer since she joined the chapter committee.







## **MEET THE 2022 NATIONAL COUNCIL**

### Terry Lampard (NSW/ACT Chapter)

NSW/ACT Chapter Chair, National Vice President, EESA Engineering Information Sharing Coordinator and EESA 100 Yearbook Coordinator

Terry graduated in 1982 and worked for Sydney County Council (which later became Ausgrid) and was there for 37 years, finishing as general manager of design and engineering. Terry exited Ausgrid in 2014 during a company restructure. His technical background is mainly in high-voltage engineering and renewable energy. After Ausgrid, he worked for NSW Treasury for over 2 years and has had a number of consulting roles for various companies since then. Terry joined EESA in the early '90s. In addition to chairing the NSW/ACT Chapter, he is preparing historical documentation to celebrate the 100-year anniversary of EESA in 2024.

#### Larry Meng (NSW/ACT Chapter) National Treasurer

Larry was the successful nominee in 2019 for a 3-year term as National Treasurer. Larry has been a member of EESA since 1973. He has been the national treasurer for the last 25 years. He worked in electrical distribution in Goulburn from '70 until '98, holding the position of chief engineer at Southern Tablelands Electricity from 1989. He exited the electricity industry during a period of amalgamations and took to work in other industries. He has been fully retired since December 2017.

### Martyn Pearce (SA/NT Chapter) Chapter Chair and National CPD Events Coordinator

Martyn's career was in the South Australian power industry. He started as a graduate engineer in the Electricity Trust of South Australia working on power construction projects. The latter 20 years of his career were spent in various management roles in the power generation field at the Port Augusta and Torrens Island power stations. Since retiring he has maintained his involvement in the power industry as Chair of the EESA Chapter in South Australia. He also participates as a volunteer in a number of other organisations.

### Amy Phan (Qld Chapter) Queensland Chapter Chair and National University Liaison

Whilst she was completing her engineering degree at the University of Queensland, Amy worked at NOJA Power in the areas of Research and Development, Production Engineering and Quality Assurance. Graduating with a Bachelor of Electrical Engineering, Amy moved to Townsville to join the graduate program with Energex/Ergon Energy in 2018. After working with the northern Network Planning and Protection teams, she moved back to Brisbane and has worked with Network Operations, Engineering Field Support, Ergon Retail and currently Substation Design. Amy is committed to continuing the ongoing success of EESA's Queensland Chapter through increasing EESA's outreach to university students and social networking events.











6



## **EECON RECAP**

## **EECON 2021 HIGHLIGHTS AND LEARNINGS**

By Russell Ellen, WA Chapter Chair and Chair of EECON 2021



## THE NEW ENERGY LANDSCAPE— CHALLENGES AND OPPORTUNITIES

EECON 2021 | 22-23 NOVEMBER, PAN PACIFIC PERTH

The WA EESA team believe that they have delivered the best ever EECON on Monday 22nd and Tuesday 23rd November. As well as two days at the Pan Pacific Hotel, there was a Western Power Corporation history walk on Sunday, the final University Poster Competition Day at the Western Power Corporation auditorium and a tour of the Western Power Corporation Control Centre on Wednesday.

We had 142 delegate registrations in Perth, 42 speakers and 130 virtual attendees. If you were not one of these then you missed out on the cutting-edge information about projects, developments, transitions, and transformations in our Electric Industry.

**Jeff Allen - EESA National President** opened the Conference and said challenging times require all of us to think differently about the management and operation of these new technologies as well as their impact on the existing electrical assets of diverse types and ages from the last 50 or more years.

As engineers we need to understand our area of expertise as well as the "big picture" overview of the changes that are occurring and the impact that these changes are having on all aspects of generation, the transmission and distribution systems and customer end use so that we can successfully make the transition to this much more complex or is it sophisticated - electric world.

**The opening Keynote session** had two speakers providing their views on the Evolution and Challenges occurring in the Electricity industry. Peter Price from Energy Queensland talked about many of the challenges being experienced as a result of 2-way flows in the distribution and transmission system as a result of solar systems and the need for storage and demand management. Michael Bielinski from Siemens talked about what impact Australia's path to net Zero by 2050 would have on all aspects of generation and use of other fuels as we "electrify" most of our activities.

**The opening Plenary had five speakers** – the CEO of Western Power - Ed Kalajzic, the CEO of Horizon Power -Stephanie Unwin, the CEO of Synergy Jason Waters, the Coordinator of Energy from Energy Policy WA (EPWA) – Kate Ryan and the Exec GM of AEMO WA - Cameron Parrotte answering the question – "Is the electricity supply industry in revolution or evolution?" We learnt that there are certainly lots of change - be it revolution or evolution - occurring, and this is providing



many challenges for those who are working in the electric energy area in these exciting times. The speakers provided many insights into the changes that are occurring. Most of the above speakers believe our industry is going through an Evolution.

Following the plenary session, Session 3 had 2 parallel sessions with 3 speakers and these sessions covered "the impact of regulations on change" and "how to overcome the new challenges" (brought about by all these changes). Session 4 covered "Distributed Energy Resources" with 2 parallel sessions with 3 speakers. On Tuesday, Session 5 had two parallel sessions each with 3 speakers covering all the "diverse types of storage" we are seeing being implemented. Session 6 again had two parallel sessions each with 3 speakers – one covering "hydrogen" and other "innovative solutions" to a range of problems. Session 7 also had 2 parallel sessions each with 3 speakers covering "future solutions" and "better ways to manage assets"

**The closing Plenary session** – "What to do now?" provided a personal perspective from the Hon Bill Johnston, MLA the Western Australia's Minister for Energy, Dr Robert Barr AM from Electric Power Consulting Pty Ltd, Adam Osseiran the President of the Hydrogen Society of Australia, Miranda Taylor the CEO of NERA, and Gary Bryant the General Manager Asset Strategy from Alinta Energy.

Some of the key observations by some of the conference speakers are set out below.

Our Minister **Hon Bill Johnston** believes we are in a Revolution and as he indicated in his presentation in the closing plenary session - "Why would I invest in Grid scale solar when I have 17GW of roof top solar to compete with", we cannot attract investors. As some background, the visit to WPC Control centre on Wednesday highlighted the big issue confronting Synergy, when the lowest cost most efficient Collie PS 300 MW base load generator had not run for the last 4 days. With an average midday load of 1.0 - 1.4 GW, AEMO is dispatching from 14 small generators to ensure grid security and reliability. WPC had a new system low of 855MW on the 14th of November 2021.

WA renewables connected to the SWIS is 17%, the Australia Government is committing everyone to achieve 50% by 2030. WA Government has not agreed to a target. The LRET scheme targets have already been met; but the Government is continuing this through to 2030. We will see more subsidised renewables connected to the grid at the expense of base load generation that will be decommissioned. Understanding this BIG issue in the SWIS, I therefore agree with the Minister that WA is in "Revolution".

**Dr Robert Barr** introduced the important topic of cost in the closing Plenary.

Dr Barr stated that the public have been sold on renewables due to promises of clean energy, low emissions, low cost, and lower electricity bills and asked us the question – "Do the promises stack up?" LRET funding encourages rapid growth in wind and solar PV generation. Great, but when we have too much it drives the pool prices down below the marginal cost of fossil fuels. Consequently, the baseload coal generators are forced into uneconomic operation and their business model becomes unviable. Baseload coal generators are forced to close. Without baseload generation high pool prices result. What the Grid must do is to invest in storage and synchronous generation which has not been costed into the future pricing. Robert Barr concluded that the LCOE for storage from Snowy 2.0 is \$88/MWh and much higher for batteries. If Net Zero 2050 is the goal – nuclear power appears to be the only viable option.



**Ian Nichols** gave an impressive talk on Storage and looked at studies completed in Europe and USA. With the AEMO 2021 Integrated System Plan, Ian derived that the NEM would need 20 -30GWHr of additional storage to achieve 95% Variable Renewable Energy target. This would need up to 22 GW of installed storage connected to the NEM. The cost (LCOE) increase for Solar backup storage would be +\$37/MWh and for wind backup storage would be +\$17MWh, provided this was connected to the distribution network.

To achieve 100% VRE the cost goes exponential.

**Ms Stephanie Unwin, CEO of Horizon Power**, claimed that Horizon Power has achieved levels of up to 90 per cent renewables in the Western Australia Pilbara town of Onslow. This is one of their first significant projects to prove the "off the grid," shift to a distributed renewable grid.

Stephanie leads a five hundred strong team of energy professionals to deliver power to some of Western Australia's most remote and regional communities. Horizon Power has more than 48,000 connections across thirty-two microgrids through 2.3 million square kilometres of rugged and remote territory. Horizon Power is leading the way in Australia for Utilities that are implementing the transition to renewable energy.

**Lee Ucich, DER Technologies Manager with Horizon Power**, won the Conway prize for best presentation for his talk on the Onslow microgrid. He described the DER and control technology responsible for transitioning the microgrid between gas + renewables operation to 100% renewables operation. Off course there were many learnings and the microgrid is not yet stable to run continually at 100% renewables.

The Cresswell best paper award, for a Non-Member was given to **Stephen Sproul of Hitachi Energy**. He presented the story of ATCO's Clean Energy Innovation Hub (CEIH) in Jandikot WA, which is primarily a demonstration unit to investigate the role that hydrogen can play in the future energy mix. This is Australia's first research facility that integrated renewable hydrogen production with a renewable energy microgrid.

This paper led to the talk from **Mehdi Toufan, GM Engineering Operations ATCO Australia**. ATCO will construct and operate a 10 MW commercial scale green hydrogen production plant producing 4.0t of Hydrogen per day in a new plant, to be built in Western Australia. The hydrogen produced will be trucked daily to the injection / customer transfer points. This commercial Hydrogen plant will be powered by the 180 MW Warradarge Wind Farm.

Hydrogen is the fuel to fill the gap to be vacated by the retirement of our Coal fired power stations. As claimed in the COP26 targets to achieve 100% renewables. There are many doubters, many open questions and not many people have the answers.

We heard from **Miranda Taylor, CEO Nero**, stating that Australia is well-positioned to play a leading role in the emerging hydrogen energy market. The industry is targeting H2 at less than \$2. NERA is in collaboration with CSIRO, Australian Hydrogen Council and Future Fuels CRC.

HyResource is tracking over 90 projects, including large-scale, demonstration and pilot facilities and proposals as well as research and development activities arising from major Hydrogen funding programs.



The single source of information on key hydrogen-related organizations, policies, and projects in Australia with supporting information can be found on. https://research.csiro.au/hyresource

#### Amy Phan Qld Chapter Chair and Chair for EECON2022 gave her thoughts on the conference:

- I thought the welcome drinks were a lovely addition and really set the tone for the conference
- the exhibition hall: it was awesome to see so many exhibitors
- the online component technology worked seamlessly
- I was mesmerised by the opening plenary. I enjoyed listening to all the perspectives and how the WA Utilities are working towards a greener future.
- the presentations were diverse

**David Gonzalez SEL, Exhibitor and Bronze Sponsor** said all the papers and conference presentations were highly professional and of a very high calibre. I can say the technical papers committee did an excellent job. Brett Hampson's white-paper presentation from SEL was well received with more than forty live attendees. Brett has already been contacted by a utility in the east coast regarding the SEL-T401L high-resolution sampling device.

The dinner was a success, and it was very entertaining. The MC Joep Vaessen, GHD did an excellent job keeping us all entertained as well as the guest speaker Doug Aberle. Same for breakfast on Tuesday with Kim Hughes. Excellent activities.

The closing plenary was quite intense with all the personal perspectives from key VIPs including the WA Minister of Energy and all other delegates. I personally liked Dr. Barr's presentation.

I enjoyed this conference and agreed with you, this is one of the best I have ever attended in Asia Pacific.

**Bernard Norton, MD Hitachi Energy Australia, Bronze Sponsor** said EECON 2021 was a fantastic success. It was inspiring to have experts from across the country come together to share their knowledge and insights on the changing energy landscape.

Congratulations to Hitachi Energy's Stephen Sproul, who received The Creswell Award for his case study on the ATCO Clean Energy Innovation Hub, called 'Grid forming energy storage with microgrid controls provides green hydrogen, enhanced reliability, reduced site costs and lower emissions'. Stephen is one of the very talented young engineers at Hitachi Energy, working on leading energy storage and microgrid projects to support the clean energy transition.

Congratulations also to Lee Ucich from Horizon Power, who won the Conway Award for his paper on the Horizon Power Onslow Project. Hitachi Energy provided the Virtual Synchronous Machine for this project, which provides clean and costeffective electricity to the local community.

The quality of papers presented at EECON 2021 was exceptionally high. Naser Hashemnia, a leading technology consultant from Hitachi Energy, presented an exceptional paper on 'Clever Ways to Manage Assets, Machine Learning driving the shift to condition-based asset management and optimising remaining useful life'. The use of advanced technology is proving to be a game-changer for asset owners everywhere.





I'd also like to commend the EESA on the way, up and coming engineers were encouraged through the Universities National Poster Project competition which, focused on electric energy. This is a fantastic way to support future leaders and encourage innovation and change across the industry. Congratulations to all the students who submitted poster papers.

#### Is the Electricity Supply Industry in "Evolution or Revolution?" This question was asked of all our presenters?

**Kate Ryan WA Coordinator of Energy** believes we are in Evolution provided we can keep up the pace of change. **Cameron Parrotte EGM AEMO** WA googled the definition to be clear on the difference between Evolution and Revolution. Evolution is "the gradual development of something" and Revolution is "a dramatic and wide-reaching change in conditions, attitudes, or operation".

The people attending this conference, I believe say we are in **Evolution**. Quote:

"We built it; We will continue to improve it; We will meet our makers goals".

Public figures and protestors like Greta Thunberg believe we are in *Revolution*. Quote:

"Rebuild the world, no coal, no gas, no emissions"? "We will march and protest until our governments listen and act". "Live with love and hope, not electricity that pollutes and increases our global temperature".

Australia has built a sustainable grid once! We rely on electricity, internet, mobile phones, fast cars, fast foods, employment that requires global partnerships and suppliers, best technology, travel, health, and financial systems.

However, the rules are changing in the Electric Energy Industry due to global growth. What is our role? Everyone has a part to play in our future and our children's future?

#### Thank you to the EECON 2021 Organising Committee who worked tirelessly to deliver a memorable EECON.

**11** | <u>Back to contents page</u>



## **EECON RECAP**



Ed Kalajzic – CEO Western Power at Opening Plenary Session



Stephanie Unwin CEO of Horizon Power, Opening Plenary Session



## **Recap of the Pre-Conference Tour held on Sunday 21 Nov**

### By Russell Ellen, WA Chapter Chair and Chair of EECON 2021

Twenty people met at the Pan Pacific Perth for a two (2) hour walking tour of the Old + New Electrical infrastructure of Perth.

The heritage tour was led by John Archer MD of Archer Electrical, Mike Millard-Hurst Training Delivery Team Leader, Safety, Environment, Quality & Training, WPC and Doug Thomson, Transmission Grid Strategy Manager, Grid Transformation of WPC.

The tour started at the old 66KV switchyard, which will be de-commissioned in the next two years.



The tour moved to the East Perth Power Station. The 103-year-old East Perth Power Station which ceased operating in 1981 and is listed on the State Register of Heritage Places.

#### The Power station was 3 stations in one:

The A station was commissioned in 1916 by the Western Australian State Government, which announced that the facility would generate all the electricity needed in the Perth Metropolitan area.

The A Station was completed with 5 generators, Units 1, 2 and 3 were 4 MW, unit 4 was 7.5MW and unit 5 was 12.5MW. A total of 32MW all operating at 40hz.

The site of East Perth was chosen because coal could easily be delivered there by rail and because the enormous quantities of cooling water required by the condensing plant could easily be drawn from the Swan River. Construction was completed at a total cost of £538,000.





The B Station was commissioned in 1938 with 1 generator at 25,000 kilowatts 6000 Volts at 40 hertz.

The C Station was commissioned in the mid 50's with 30,000 kilowatts at 22kV and 50 hz.

The A& B station generated at 40hz and the C Station at 50 hz.

A frequency changer was installed so all stations could run at 50 Hz.

In 1968 the station converted from coal to oil, but six years later returned to coal firing. The station was decommissioned and closed in December 1981, as more advanced and cheaper methods of electricity generation made the facility redundant.

The Power Station land is at the centre of a \$218 million redevelopment program by the state government. They have reportedly valued the land at just \$1 and have sold it onto FMG owner Andrew Forrest. The state government had initially planned to contribute \$50 million in site works to allow site development. We believe a special deal has been done to make the site into a Cultural and Heritage precinct.



Photo of the East Perth Power Station site with Station A, B, C and Frequency changer room. Coal delivered to the site by train from Collie.

| Back to contents page



# **EECON RECAP**





Photo of C Station and the 40 – 50hz frequency changer room.

John Archer describing the generator speed on run away fault, stop at 2900rpm from a nominal 1500rpm.

The tour then picked up a couple of the old zone substations where the operators lived in the early days.

Wellington St via Goderich Street and Bennett Street to Wellington Square and through the hospital precinct towards the CBD. You will notice Substation no. 1 and the site of the first Perth power station is now part of the hospital building E. Across the road from the old substation building is a working substation.



Photo of 1st Perth Power Station and then Substation No 1.



Next, a walk down Wellington Street to Pier Street and turn left towards Murray Street. Take a right onto Murray Street and find the Electrical and Gas Department Building halfway down the block before you hit Barrack Street. This is the original headquarters of the now Western Power Corporation. It is not used, however has heritage status and has been preserved.



The walking tour continued west along Murray Street, passing the old General Post Office. Cross over William Street and continue up Murray Street until you reach Queen and King streets. Substation no. 2 is building number 333.

This was another of the original substations that generated and distributed energy to the city of Perth.

The East Perth Power Station is one of the State's most significant industrial heritage buildings. It includes a range of remnant machinery and equipment that is believed to be unique in the world because it contains the five different stages of power generation technology that occurred in the 20th century.

As early as 1993 plans were in place for conservation and protection of the site.

In 2007 an oral history project was conducted of former workers at the site. The recordings are held at Battye Library. In 2011, University of Western Australia historian Charles Fox published a history of the station Powering Perth.



# **EECON 2021 National University Poster Paper Competition Report**

### By Russell Ellen, WA Chapter Chair and Chair of EECON 2021

The EESA National Council runs a student poster paper competition in conjunction with the EESA national conference each year. This year the Western Australia Chapter of the Electric Energy Society of Australia was the host for this event.

The competition is open to all university students who have an Electric Energy project as part of their university degree; undergraduate (bachelor's degree) or postgraduate (Masters or PhD). Every year many innovative projects in the field of Electrical Energy Systems are completed. The EESA poster paper prize competition is aimed at bringing graduating students and potential colleagues and employers together to experience, first-hand, some of the excellent work carried out by student engineers. Students will have the opportunity to display and demonstrate their work, and industry attendees will have the opportunity to experience the quality of the student's work and engage in conversation with them in an informal way. We believe however that this dialogue will continue to eventually lead to mutually beneficial enterprises including potential employment, further research to potential patents, and at the very least a wonderful networking opportunity.

We received twenty-four entries from 12 Universities, we are pleased to announce the following voting for these entries was completed and the winners for these awards are listed below.

This year we were pleased to have API as a National sponsor for our Poster awards. API awarded two \$200 prizes for the API Delegates Choice Award for best student poster. This was a new innovation this year, we asked all EECON 2021 delegates to vote for the best paper. A voting website was sent to 216 registered delegates from the conference. Students were asked to upload their poster paper to this website and to provide a 5 minute "You Tube" video explaining their project, there objectives, scope and what they achieved.

Western Power presented the WPC People's Choice Award, valued at \$300. The 24 poster papers were printed and placed on poster boards at the WPC Auditorium in Wellington St Perth. WPC staff we invited to come and review the papers and vote for the one they like as the best.

EESA awarded in two categories: Undergraduate (bachelor's degree), Postgraduate (Master's Degree and PhD). Judging was co-ordinated by Mansour Mohseni APD, and the judging panel of Douglas Thomson WPC, Iain Mackenzie Woodside. Rob DelBianco Delco Consultants, Laurie Curro Horizon Power, Ria Sheryl Belisario WPC and Alireza Fereidouni AEMO.

Prizes awarded were:

- · 1st place: \$300
- · 2nd place: \$200
- · 3rd place: \$100





API Delegates Choice for two best papers won \$200 prize money and certificate. This was selected by 138 delegates who voted out of 216 delegates invited.

#### Winners were:

**Zifan Lin** from University of Western Australia, his project was "Novel Multi-terminal DC/DC Converter for HESS." **Steward Qie** from University of Western Australia, his project was "A new data-driven control algorithm for interleaved DC/DC boost converter."

#### Wester Power People's Choice for best paper won \$300 prize and certificate. 38 WPC employees voted.

**Osaka Rubasinghe** from University of Western Australia, won with his project "Short-term Forecasting of Daily Net Load Based on Improved CEEMDAN and LSTM Neural Networks."

#### EESA Award for Undergraduate 1st Prize \$300 prize and certificate.

**Sahan Gamagedera** from Curtin University, his project was "Analysis of Power Quality & Stability Issues for Islanded Microgrid with Renewables."

#### EESA Award for Postgraduate 1st Prize \$300 prize and certificate.

**Ridho Wastu Widyawan** from University of New South Wales, his project was "Development of Real-time Fault Simulator for Overhead Line Monitoring Systems."

#### **EESA** Award for Undergraduate 2nd Prize \$200 prize and certificate.

**Cjacque Rautenbach** from Curtin University, his project was "Non-Intrusive Energy Harvesting Method for Powering a Wireless Sensor Node."

#### EESA Award for Postgraduate 2nd Prize \$200 prize and certificate.

**James Moulden** from Edith Cowan University, his project was "Industrial PV-Battery Microgrid Optimisation and Development."

#### **EESA** Award for Undergraduate 3rd Prize \$100 prize and certificate.

Jamin Hunter from Curtin University, his project was "Machine Learning Applied to Optimal Power Flow."

#### EESA Award for Postgraduate 3rd Prize \$100 prize and certificate.

**Jinping Zhao** from Murdoch University, her project was "End-of-life Failure Probability Assessment Considering Electric Vehicle Integration".

| Back to contents page

18



# **EECON RECAP**



API People Choice awarded by David Pointing CEO API to Steward Qie & Zifan Lin from University of Western Australia



WPC People choice awarded by Ben Bristow, Head of Grid Transformation, to Osaka Rubasinghe & Tingze Zhang from University of Western Australia.



# **THANKS TO OUR EECON SPONSORS & EXHIBITORS**

# PLATINUM





19



# MEMBER UPDATE

## PETER DULHUNTY BECOMES A FELLOW MEMBER OF EESA

#### By Terry Lampard – NSW/ACT Chapter Chair

I am pleased to announce that NSW/ACT Chapter Committee member, Peter Dulhunty has been conferred as a Fellow of EESA.

Peter is Chief Engineer of Dulhunty Works. He is a longterm member of EESA and has been a member of the NSW/ACT Chapter Committee since 1995. During that time, he has served in various roles including CIRED Liaison, CIGRE Liaison and University Liaison.

Peter has personally made significant contributions to the energy industry through the development and implementation of several innovative products including transmission line vibration dampers and fibre composite poles.

Peter has participated in numerous Standards Australia, IEC and CIGRE committees and working groups since the 1980's and is currently the Convenor of CIGRE WG B2.73 – Guide for the prevention of vegetation fires caused by overhead line systems.

Peter has made a significant contribution to preserving the history of EESA by scanning and indexing some 80 years' worth of EESA conference papers and proceedings – 1666 papers in total.



Back to contents page

Peter has also been a strong supporter of state-based and national EESA conferences over many years as a sponsor, exhibitor, presenter, and session chair, as well as participating in organising committees. Through Peter, Dulhunty Works is now a Bronze Corporate Member of EESA.

EESA presentations include:

- Winners and losers from ACCC reforms in transmission ampacity management 2002
- Recent innovation in vibration dampers 2003
- CIRED Conference May 2007, The Intelligent Grid 2007
- Bushfire performance of electricity networks 2020
- Peter's long-term contribution to EESA and the Energy Industry is greatly appreciated, and I am pleased to congratulate him on becoming a Fellow of EESA.



# **EECON 2022 ANNOUNCEMENT**

## **EECON 2022 IS IN BRISBANE IN OCTOBER 2022!**

### By Amy Phan - EESA Queensland Chapter Chair and EECON 2022 Conference Chair

EESA Queensland Chapter is happy to announce that EECON 2022 will be in Brisbane at the Royal International Convention Centre in October 2022. The conference theme, Our Energy Future - Unlocking Net Zero, will bridge on from Perth's conference by exploring how Australia is piecing together its jigsaw puzzle for a net zero future. There will be preconference tours, different presentation sessions that will address various themes, an exhibitors hall and a conference dinner. The Queensland Chapter hosted an extremely successful EECON in 2018 and this EECON will not disappoint. We look forward to welcoming you to Brisbane 2022!



# **UPCOMING EVENTS**

### **Fundamental Series: Protection**

#### **THURSDAY, 3 FEBRUARY 2021**



#### Overview:

EESA is pleased to present Craig Taylor, a long-time electricity industry professional, who will present a fundamentals series topic on Protection Systems. Are you familiar with the protection systems used to protect electrical network employees, the community as well as the equipment installed? <u>Read</u> <u>more.</u>

### LD <u>VIEW EVENT</u>

Time: 3.30 PM - 5 PM AEST

Location: 26 Reddacliff Street, Newstead Qld

Cost: EESA members: \$0 EA members: \$20 Non-members: \$30

### EESA Technical site visit to Hitachi ABB Power Grids

## FRIDAY, 4 FEBRUARY 2021 VIC VIEW EVENT MITACHI Overview: Hitachi ABB Power Grids are the industry Hitachi abb power Grids are the industry Time: 9 AM - 12 PM AEST





Hitachi ABB Power Grids are the industry leader in high voltage solutions and products. For decades, the Victorian head office in Lilydale has specialized in power quality products and solutions for the domestic and global markets, manufacturing capacitor banks, capacitor switches, and energy storage solutions to enable its customers, to operate more efficiently and with less environmental impact. <u>Read more.</u>

Location: 88 Beresford Road Lilydale Victoria, 3140

Cost: EESA members: \$0 EA members: \$20 Non-members: \$30

23



# THANKS TO OUR CORPORATE MEMBERS

## **PLATINUM**



technology

ZEROSEQUEN

safearth

Schneider GElectric

united energy