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Insights for the Australian Power Sector

# TJ Effeney Award CIGRE 2025 Conference

Supported by the TJ Effeney Scholarship  
for Professional Development

[api.edu.au/power-up-program](http://api.edu.au/power-up-program)



# About the API's T.J. Effeney Award

In honour of the late Terry Effeney, one of the Australian energy industry's greatest contributors, the API created the T.J Effeney Award in collaboration with the Effeney Family, Ergon Energy & Energex (part of the Energy Queensland Group),

**Empowering the next  
generation with  
knowledge, connections  
and supporting others.**

The Award supports the Australian power sector's next generation (university students) to undertake a activity or program of study (domestic or international) in the energy sector to further their professional career development. **104 students** from across Australia - ~50% women - have received the TJ Effeney Award so far (to October 2025)!

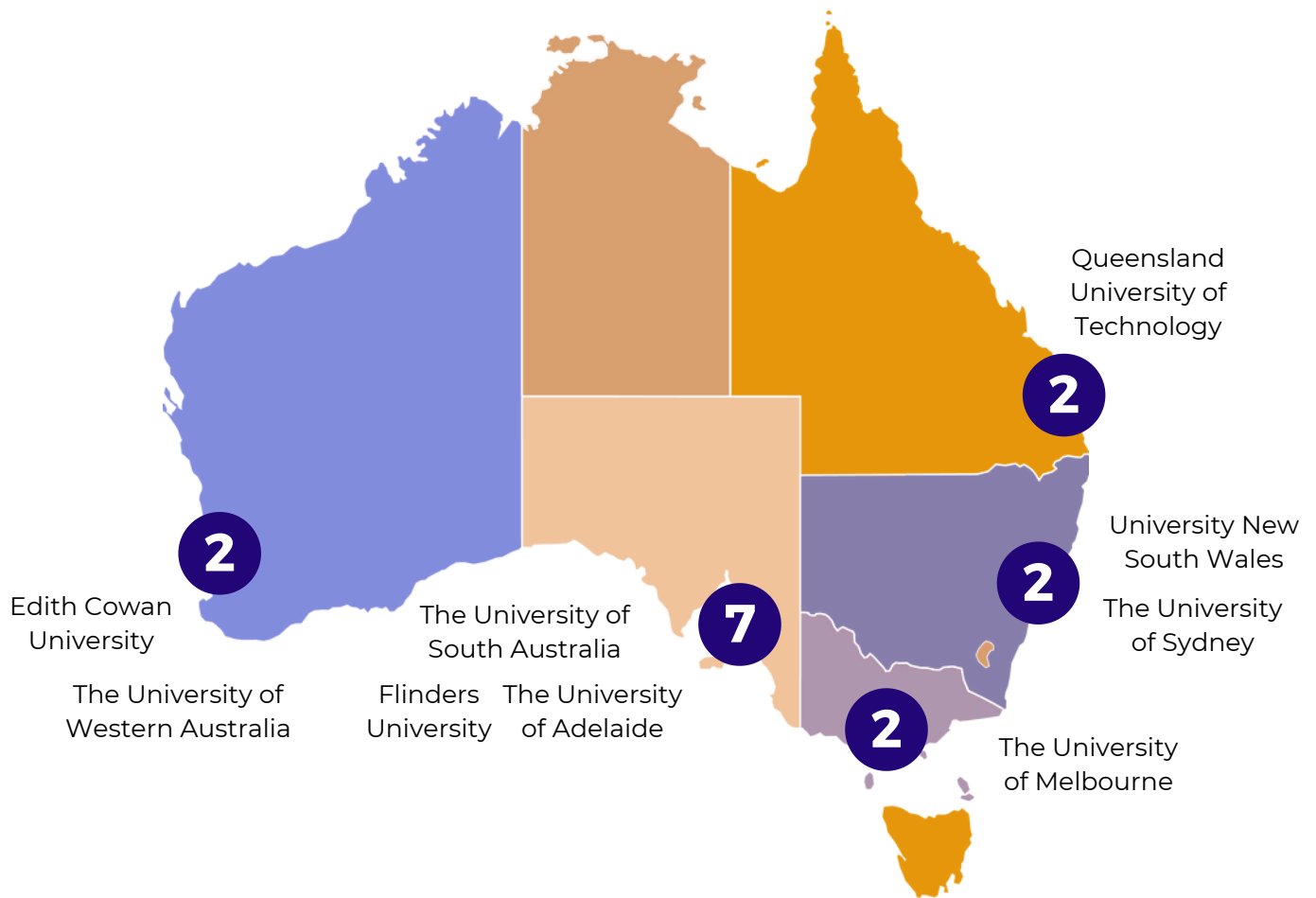
The activities supported by the Award are aligned with the values and strengths displayed by Terry Effeney during his career:

- **Knowledge:** supporting activities that will broaden a student's knowledge and skills in the energy sector, informing and inspiring them to make meaningful contributions
- **Connections:** increase the personal network of contacts for a student, including other students who are also interested in careers in power, and with graduates and experienced industry professionals who can support a student in planning and starting their career
- **Supporting others:** empowering the students to share the knowledge and inspiration they have gained from the award with other students and the broader API community.

The Award is offered on a yearly basis by the API to Australian university students following an application process. The Award has supported 2x individual students to undertake a substantial international trip, but was modified in 2022 to support cohorts of students to attend industry conference selected by the API - achieve more of . The Award now supports organised groups of 20-25 students each year, making it a fun and impactful experience, with support for flights, accommodation and registration for selected conferences run by the API's partners include ENA, EESA and CIGRE Australia.

Find further information at: [www.api.edu.au/tj-effeney-award](http://www.api.edu.au/tj-effeney-award)

# 3 Days, 15 Students, 10 Universities!



## Thank you to our Members



# Reflections on supporting 25 Students to join the CIGRE 2025 Conference

Taking a cohort of students to an industry conference is both challenging and transformative; for them, and for the API staff who ensure every experience drives learning and connection.

**Day 1: Industry Immersion.** The group began with visits to South Australia Power Networks (SAPN) and ElectraNet. At SAPN's Network Innovation Centre, Eleanor Ostrenga, Vitor Klein and Adam Cameron showcased how new technologies are reshaping power in the home and across the grid. This gave students first-hand insight into innovation in action.

At ElectraNet, Lara Falting and Brad Jones guided students through the control room, demonstrating how transmission operations maintain energy security across the state.

The day concluded with the API Alumni Networking Event, where students connected with API Board members and alumni from across member organisations, broadening their professional networks and learning from those shaping the sector.

## **Days 2–3: CIGRE “Shaping the Power Systems of Tomorrow” Conference.**

Over two days, the TJ Effeney Awardees attended keynote sessions from leaders including CIGRE CEO Peter McIntyre, CIGRE President Professor Konstantin Papailiou, AEMO's Nicola Falcon, and A/Prof Tim Nelson. Students gained valuable exposure to the technical, policy, and leadership issues driving Australia's energy transition.

Several awardees presented their own research in the Next Generation Technical Presentations, demonstrating their capability and confidence before industry experts. The Next Gen Networking Function provided opportunities to engage with peers and leaders, including Professor Papailios, strengthening links across generations of engineers.

On Wednesday, participants attended the Women in Energy Breakfast, featuring Captain Mona Shindy CSC. Her reflections on navigating a male-dominated profession and leading cultural change within the Navy offered powerful lessons in resilience and leadership that resonated deeply with attendees.

## **Acknowledgements:**

The API thanks the students for their professionalism and curiosity; API staff for their coordination and support; and CIGRE, particularly Peter McIntyre and Adrian Lloyd, along with Energy Queensland (Ergon Energy and Energex) and the Effeney family, for their ongoing support of the TJ Effeney Award, creating opportunities for the next generation of engineers to learn, connect, and lead in the power sector.

## **Cameron McMurtrie**

Undergraduate Programs Manager



## Danielle Peralta

The University of Western Australia, Perth.

### What is the top two things you learnt at the CIGRE Australia Conference?

The CIGRE Australia Conference featured presentations that highlighted the challenges of our evolving power network, its complex behaviors and solutions to address them. The increased connection of Inverter-Based Resources (IBR) into the grid and the retirement of conventional generation has reduced the network's system strength. Despite the technical depth of the research work presented, I was able to gain a high-level understanding of technologies such as Grid-Forming Inverters and Battery Energy Storage Systems that have some capability to help re-stabilize the grid in response to disturbances. Furthermore, I learned that the emerging complexity of the grid calls for vigilance in modeling and analysis. Existing models must be revisited to ensure that changes in the dynamic behavior of the network are captured to allow us to gain a more certain and confident understanding of how the grid operates.



### What was your favorite part of the TJ Effeney Award experience and why?



My favorite part of the TJ Effeney Award was having the opportunity to relate to other students in the power industry from the different states of Australia. Not only did it allow me to learn more about the power system on the opposite side of the country (the NEM), I felt a sense of community despite being in a new city and being a student amongst many experienced industry professionals in the CIGRE Conference. Through shared meals, carpools and shared university experiences, I was

able to form meaningful relationships with other TJ Effeney Awardees in as little as 2.5 days - and hope to meet them again in the future!

## Dinithi Senarath

The Queensland University of Technology,  
Brisbane.

### What are the top two things you learnt at the CIGRE Australia Conference?

At the CIGRE Australia Conference, I gained valuable insights into the stability challenges faced by future power systems, particularly those with high renewable energy penetration. The retirement of synchronous generators and increasing reliance on inverter-based resources are reducing system inertia, making traditional stability assumptions inadequate. This highlights the need for coordinated planning across generation, transmission, and control systems. I also learned about the growing role of grid-forming inverters and advanced battery systems, which not only provide synthetic inertia but also support damping and voltage stability in low-inertia grids. Another key takeaway was from the keynote by Prof. Konstantin, who powerfully reminded us that protecting the planet is a shared responsibility. His words, “There’s no Plan B, because we don’t have a Planet B”, were truly impactful. He illustrated the scale of the upcoming energy transition, noting that by 2050, the estimated global requirement for high-voltage overhead lines is between 4.5–8.5 million km. That’s several times the distance from Earth to the Moon (384,000 km), highlighting the magnitude of infrastructure needed to support a decarbonized future.



### What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was attending the CIGRE Australia Conference 2025 in Adelaide. It was a unique opportunity to learn directly from industry leaders and researchers who are at the forefront of shaping the future energy landscape. The keynote sessions, especially those on system stability and grid transformation, were both inspiring and thought-provoking. Equally memorable was connecting with fellow scholarship recipients from across Australia. Sharing experiences, ideas, and future aspirations in such a collaborative environment made the whole experience even more enriching and motivating.

## Gethmi Karunanayaka

The University of South Australia, Adelaide.

### What is the top two things you learnt at the CIGRE Australia Conference?

One of the biggest learnings for me was the critical role of distributed energy resources (DERs) and how their rapid uptake is reshaping grid operations. The discussions highlighted both the challenges and opportunities of integrating DERs while ensuring security, reliability, and affordability for customers. My second key takeaway was the evolving market design and planning frameworks that will enable large-scale renewables to connect seamlessly to the grid. I gained a deeper appreciation for how engineering innovation must be paired with policy, regulation, and collaboration across stakeholders to successfully manage the energy transition. Hearing real-world examples of large projects and the lessons learned reinforced that transitioning to net zero requires not just technical solutions but also flexible systems thinking. These insights broadened my perspective on the scale of the transformation ahead and the exciting opportunities for young engineers to contribute meaningfully.



### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

One of the most powerful moments at the CIGRE Australia Conference was hearing from Konstantinos, a global leader in our sector, who reminded us: "There is no Plan B, because there is no Planet B." This statement deeply challenged my thinking by highlighting the urgency and responsibility we have as engineers to accelerate the energy transition. It reinforced that delays or compromises are not options when it comes to climate and sustainability, the work we do directly shapes the world future generations will inherit. This message has inspired me to approach my career with an even greater sense of purpose. It motivated me to not only strengthen my technical expertise in renewable energy and system planning but also to actively contribute to collaborative industry efforts that drive real-world impact. The conference showed me that leadership in the power sector means aligning innovation, policy, and people to achieve a net zero future.

### What advice do you have for others considering going to industry conferences?

Make the most of every opportunity, attend diverse sessions, ask questions, and engage with speakers. Don't be shy to introduce yourself; networking is as valuable as the presentations.

Conferences are a chance to broaden your perspective, gain industry insights, and build connections that can shape your career.

### What advice do you have for others considering a career in power?

The power sector is dynamic, purpose-driven, and central to achieving net zero. Be open to learning across technical, regulatory, and community dimensions. Develop strong problem-solving and collaboration skills and seek opportunities for hands-on experience. A career in power means shaping a sustainable future, an exciting responsibility.

## Manikya Maxim

The University of Adelaide, Adelaide.

### What are the top two things you learnt at the CIGRE Australia Conference?

I learnt about the unfortunate blackout that occurred in the Iberian Peninsula this year. Many speakers touched on it as a case study as it was so recent and illustrates a worst case scenario for our evolving global network. It was interesting to see what went wrong at a granular level, not only from an infrastructure point of view but from a market design perspective.

Secondly, it was extremely insightful to see how different network participants are ensuring system security as the industry is pivoting away from synchronous generation. I understood that this was critical to the renewable energy transition, but I further developed my understanding by understanding how players in industry are making it a safe and reliable transition.



### What was your favourite part of the TJ Effenev Award experience and why?

I'm honoured to have received the TJ Effenev Award that was graciously granted by the API. It was a wonderful experience, and a truly fulfilling introduction to a professional conference and networking opportunity- Attending CIGRE/CIDER 2025. As an environmental engineer, I am relatively new to the power sector. As a young engineer, it was truly an awe-inspiring experience to be surrounded by such accomplished engineers, hear about groundbreaking research and initiatives and really immerse us in the industry. From reading AEMO papers, to meeting their authors it was an immensely rewarding week. I have been personally interested in being a part of the renewable energy transition. I learnt about the many initiatives and schemes that are being trialled and implemented across many different sub areas within our complex network. It was especially interesting to hear not only the technical aspects, but the social and economic



rhetorics as well. Attending CIGRE, so early in my career, will forever be an unforgettable experience. I humbly thank API for such a tremendous opportunity.

### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

An experience that was truly unique was the opportunity to meet the distinguished Konstantin Papailiou, who is the president of CIGRE. It was inspiring to hear about his vast career in the power sector and when meeting him he was gracious, even sharing some advice and kind words of encouragement, to remind us that we are the future of this sector.

## Pablo Apablaza

The University of Melbourne, Melbourne.

### What is the top two things you learnt at the CIGRE Australia Conference?

The CIGRE Australia Conference was a highly valuable experience from a professional perspective, particularly for me as I am currently studying for a degree in Power Engineering. It provided not only technical insights but also a broader understanding of the challenges and opportunities shaping the Australian electricity sector.



The first key takeaway from the conference is the profound impact that distributed energy resources (DER) are having on both the operation and planning of the electricity system. The conference highlighted how DER, such as rooftop solar, batteries, and flexible technologies such as electric vehicles, are no longer peripheral but central elements for the future Australian system. I gained firsthand insight into the experiences and challenges faced by system operators across different states, including the need for greater flexibility and the opportunities for DER to participate as price-responsive assets. This fundamentally shifts the traditional perception of power systems from passive to a new paradigm where consumers and distributed technologies play an active role in operation and planning.

The second key learning is the recognition that Australia's energy transition cannot succeed through technical innovation alone; it requires coordinated efforts across technical, political, and economic domains. Ensuring that future power systems remain reliable, secure, and cost-effective demands collaboration between engineers, policymakers, regulators, and investors. For example, while deep technical expertise is required to manage systems with very high levels of inverter-based resources (IBR), an appropriate market structure is also critical to provide incentives for the required technological investments to be in place.

## What was your favourite part of the TJ Effeney Award experience and why?

The TJ Effeney Award experience has been invaluable for my professional growth, and I am very grateful to the Australian Power Institute for the opportunity. The award offered a unique combination of technical learning, industry exposure, and personal connections that will stay with me throughout my career. From my perspective, all the activities undertaken, including the site visits to ElectraNet and SA Power Networks, as well as attending the CIGRE Australia 2025 conference, the CIGRE NGN sessions, and the many moments of camaraderie, were excellent opportunities to broaden my understanding of power systems. These experiences allowed me to learn not only about technical aspects, such as system operations during the visit to ElectraNet's control room or the tutorials at the CIGRE Conference, but also about economic and policy dimensions through the CIDER sessions, all with a distinctly Australian perspective.

One of the things that stood out most for me, however, was the chance to meet and share experiences with peers from many parts of Australia who are also pursuing careers in the power sector. Engaging in conversations about the transformations and challenges facing electricity systems, while also hearing about their studies and professional journeys in different Australian companies, was truly inspiring. Building these connections made me feel part of a broader professional community that is passionate about shaping the future of energy. Ultimately, my favourite part of the TJ Effeney Award was this blend of technical learning and professional connections. It reinforced my motivation to contribute to the sector and gave me a clearer sense of the collaborative spirit required to navigate the challenging energy transition.

## Jacinta Fitzgerald

**The University of Melbourne, Melbourne.**

### What is the top two things you learnt at the CIGRE Australia Conference?

Beyond all the new technical knowledge I gained throughout the CIGRE Australia Conference, the top two things I learned are about myself. I learned that the power sector is exactly where I want to be and I am excited to learn and grow in this space alongside inspiring professionals who have made such great change. Secondly, I learned that I am passionate about many areas of the power sector and want to be a part of it all. I really enjoyed listening to people who work at TNSPs, DNSPs, universities, consultancies, developers and government agencies all solving problems from different perspectives. I learned about integrating inverter-based resources, market modelling, connecting renewable energy zones, system planning and consumer involvement in the rollout of distributed energy resources. I found it all so interesting and I'm not quite sure where my career will take me but I'm excited to be a part of different areas and play a part in progressing the renewable energy transition.



### What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was all the great people I met and conversations I had across the three days. First, it was fantastic to meet a group of university students who share the same passion for power. I really enjoyed getting to know the other awardees and we instantly all got along so well. It was nice to have familiar faces to chat with throughout the conference after getting to know each other during our site visits on day one and API Alumni drinks on the first evening. After each session, we all reflected on the respective sessions we attended and it was insightful to hear other perspectives, particularly with such a knowledgeable group. I also really enjoyed meeting so many new people in the power sector and feeling inspired by all the passionate professionals sparking change through their work. It makes me feel confident that I have chosen the right field being surrounded by engineers who are all so passionate about overcoming technical challenges to reach a common goal. It was reassuring to hear how interdisciplinary everyone's interests are and to hear from different perspectives and fields that I have not previously been exposed to, particularly in the DER space throughout the CIDER sessions. I particularly enjoyed connecting with the CIGRE NextGen Network across the conference and at the NextGen function on Tuesday Night. I know that I will be working with this group of people for years to come, and I am excited to collaborate in driving in Australia's Energy transition.

### Kaidyn McLennan

**Edith Cowan University, Perth.**

### What was your favourite part of the TJ Effeney Award experience and why?

The Women in Power Leadership breakfast was my favourite part of the award. There was so much information from the incredibly accomplished Captain Mona Shindy CSC, and her life story was very inspiring. Having a piece of her knowledge, and her advice, will stick with me and I feel incredibly privileged to have met her and learned from her presentation.

Specifically, her "listen first" leadership approach was very insightful, and also very intuitive. I can directly see how this will assist in growing a better work environment as a leader, and this is something that will stay with me as I progress through life, and already has assisted me with leadership positions I am in.

Furthermore, getting to meet so much talent from around Australia was such a great experience, and I loved the opportunity to meet other TJ Effeney awardees and hear their individual stories.



Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

The introductory speech and keynote speakers discussing key market issues really opened my eyes to how large the power industry is, and how many gears need to turn together. Specifically, the mentioning of how the different businesses interact, and how important contracts are. Being in Western Australia, where we are not on the NEM, having information like this is very interesting, as it seems to be a whole different world. Getting knowledge about how different companies need to collaborate to ensure an easy transition to the world of renewables really emphasised the importance of economic decisions within the power industry, and it will help me greatly to both make sense of why certain decisions are made, as well as guide my decisions to become a better engineer overall.



## Sophie Blanks

**The University of Sydney, Sydney.**

What is the top two things you learnt at the CIGRE Australia Conference?

The first key thing that I learnt at the CIGRE Australian conference was the role that Distributed Network Service Providers (DNSPs) play in the energy transition and utilising Distributed Energy Resources (DERs) to increase the renewable energy penetration of the grid. I learnt that in South Australia there is currently 3GW of rooftop solar capacity installed which has led to multiple occasions of negative demand during the day. As a result, the distribution network is seeing regular reverse power flows which put stress on substations and the need to curtail solar resources if the demand can not match the supply using battery storage. These problems have led to extensive innovation by DNSPs such as South Australia Power Networks (SAPN), who are looking into how inverter communication systems and Distributed Energy Resource Management Systems (DERMS) can be used to better coordinate DERs so that solar can provide for more of the state's peak energy demand while ensuring system stability. I also learnt about how Common smart inverter profiles (CSIP-AUS) is being developed to better communicate with the inverters that connect rooftop solar and home batteries to the grid. In future, this will enable better management of DERs and reduce their volatility to market prices to further secure the grid.





## What was your favourite part of the TJ Effeney Award experience and why?

As part of the TJ Effeney Award experience in Adelaide this year, I had the unique opportunity to visit the South Australia Power Network's (SAPN) Innovation Centre, ElectraNet's control room and gas-insulated substation, and attend the CIGRE 2025 conference. The conference featured keynote speakers and presenters who discussed the challenges and solutions arising from the energy transition toward net zero by 2050. It's hard to choose a favourite part, as I believe it was the culmination of all the site tours, speakers, and networking events that inspired me and made me excited about my future career in the energy sector. I see the power industry as a space that requires constant innovation to address the significant challenges ahead. The opportunity to engage with such forward-thinking professionals has further fuelled my commitment to learning more about the energy transition and the role I can play in it. Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector? As a keynote speaker of the CIDER 2025 conference, Michelle Howie challenged my thinking surrounding the barriers of upscaling innovative designs for utilisation system wide. Her presentation was centred around how Electric Vehicles can be used as a DER to theoretically help boost the energy storage capacity of the network. However, despite the concept being around for years, there has been slow uptake. She discussed the barriers to this utilisation using her position on the World Energy council and as Innovation Development Manager at SAPN. Overall, she challenged me to consider how standards and legislation need to be updated in order to provide clear guidelines for manufacturers for V2G to be implemented and the importance of getting the right people in the room to discuss current and future barriers and come up with a plan of action.

## Cassandra Ellis

**Flinders University, Adelaide.**

### What are the top two things you learnt at the CIGRE Australia Conference?

There was so much to learn at CIGRE that it is difficult to identify just two pieces of information, especially as the conference had keynote addresses that spoke to the energy transition providing valuable insight into the path forward from a big picture lens, but there were also presentations on the technical details required for the transition to occur safely.

The key theme that I took away was the role that energy storage will play in the transition, both utility scale and consumer owned storage. There were presentations that outlined that storage can play a critical role in;

- Supporting network restoration in the event of a blackstart
- Helping maintain sufficient system strength as fossil fuel generators switch off
- Reducing network augmentation through peak load reduction



- Providing load under minimum system load conditions

However, these benefits do not come without challenges such as introducing a new asset type into system operator portfolios something not done in a long time, consumer buy in to be able to use consumer batteries through aggregators, and putting mechanisms in place to ensure these batteries do not cause other network impacts.

The other key thing I took away was the impact fossil fuel generation has on electricity bills, with two presentations outlining that if the renewable transition is delayed a resultant increase in electricity prices will occur. It showed the importance of supporting the transition and ensuring any policies, or process changes are not going to hold up the transition.

### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

There was a session on Market Design and Development through which multiple presentations investigated the current electricity market and the role it plays in the energy industry of today and the future. This collection of presentations opened my eyes to the complexity of the energy market, and the range of factors/groups that need to be considered when operating the market. These include but are certainly not limited to;

- Ensuring network security is maintained through adequate inertia/system strength supporting generation units
- Different pricing markets for different requirements, such as frequency control that has a very short window, to capacity markets that can be considered years in advance
- Different customer segments from large generation owners, industrial plant operators, households with generation and household without generation

The discussions highlighted that this is an evolving space that requires thought from all angles and requires a broad range of expertise and backgrounds to solve this problem and identify an optimal solution for the future of the energy market.

## Angus Cheng

The University of New South Wales, Sydney.

### What is the top two things you learnt at the CIGRE Australia Conference?

Attending the 2025 CIGRE Australia Conference in Adelaide was an invaluable professional development experience that deepened my understanding of the future of Australia's power systems. One of the key highlights was learning from presentations delivered by senior engineers and technical leaders from AEMO, Transgrid, Powerlink, and industry bodies. Sessions such as System Strength, ADMS & DERMS, and Managing High Penetration of DER provided insight into the technical and regulatory challenges shaping grid stability and renewable integration. These sessions also emphasised the importance of advanced system modelling, REZ enablement, and the role of inverter-based resources, which directly align with my engineering interests in transmission, distributed energy, and power system planning.

Equally impactful was the opportunity to engage directly with professionals during networking events and the NGN seminar. I had meaningful conversations with representatives from Siemens, Schneider Electric, ABB, and Transgrid, who shared valuable perspectives on career development, industry transition, and ongoing grid transformation projects. The site tours at SA Power Networks and ElectraNet's Transmission Operations Centre further contextualised the conference learnings. Observing real-time SCADA systems, control rooms, and protection equipment underscored how theoretical concepts like grid hosting capacity and DER field behaviour are applied in practice. These combined experiences of technical knowledge, industry insight, and face-to-face interaction which gave me a clearer picture of where I want to contribute as a future engineer in the sector and strengthened my passion for pursuing a career in Australia's clean energy transition.

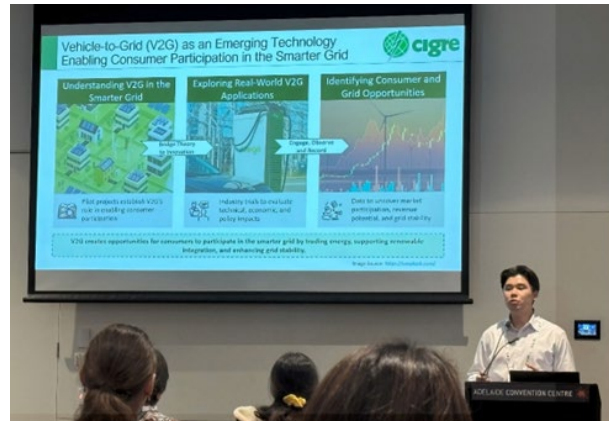


## What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was having the opportunity to present at the NEXTGEN Seminar on my topic *Vehicle-to-Grid (V2G) Charging: Creating Opportunities for Active Consumer Participation in the Smarter Electricity Grid*. This was an incredibly rewarding moment, as it allowed me, as a young and emerging leader, to speak confidently on a topic I am passionate about how bi-directional EV charging can support grid flexibility, renewable integration, and empower consumers to become prosumers.

Sharing this presentation in front of a technically engaged audience was not only an honour, but a key moment for my personal and professional growth. It strengthened my public speaking and communication skills, challenged me to explain complex concepts clearly, and allowed me to represent the voice of the next generation of engineers. The Q&A panel afterward was particularly enriching, as it sparked insightful discussion from industry leaders and fellow students, reinforcing the value of my research and perspective.

This platform gave me the confidence to contribute meaningfully to the power systems dialogue and affirmed my aspirations to play an active role in shaping Australia's energy transition.



## Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

One topic that profoundly challenged my thinking at the CIGRE Australia Conference was the technical presentation by Jose Moreira, Head of Grid Software at Siemens, on "*Determination of the Maximum LV Grid Hosting Capacity for Rapid Integration of Photovoltaics, Electric Vehicles, and Heat Pumps.*" His session explored the growing complexity of managing low-voltage distribution networks as they face unprecedented bi-directional power flows, increasingly driven by rooftop solar, EV chargers, and other behind-the-meter technologies.

Prior to this, I had primarily associated grid hosting capacity with broad planning metrics. However, Jose's presentation introduced me to advanced modelling techniques and software simulations that utilities are now deploying to calculate real-time hosting limits, feeder headroom, and thermal constraints. This opened my eyes to the critical role of software-driven solutions and dynamic hosting capacity analysis in enabling faster, safer integration of distributed energy resources (DERs) without overhauling physical infrastructure.

This experience deepened my appreciation for the intersection between data-driven tools, network intelligence, and power system engineering. It's inspired me to explore future roles that merge technical engineering with digital grid analytics, whether through planning tools, real-time



operation systems, or DER integration strategies, in pursuit of a smarter, more resilient electricity grid.

### What advice do you have for others considering going to industry conferences?

My advice to others considering attending industry conferences is simple: **go with an open mind, prepared to listen, learn, and connect.** These events are a rare opportunity to hear directly from industry leaders, learn about cutting-edge innovations, and gain insights into where the sector is heading. Don't just sit back, instead, engage actively in technical sessions, ask thoughtful questions, and take notes to reflect on later. The most valuable takeaways often come from informal chats during coffee breaks or site visits, where you can connect with professionals who might one day become your mentors or colleagues.

If you're early in your career, it's easy to feel intimidated but don't let that stop you. Everyone there started somewhere. Be curious, introduce yourself confidently, and show genuine interest. Conferences are a platform for growth, both technically and professionally, and I wholeheartedly recommend them to anyone passionate about building a future in the power sector.



### What advice do you have for others considering a career in power?

If you're considering a career in power, go for it, it's one of the most impactful, future-focused sectors you can join. The power industry is at the heart of the clean energy transition, electrification, and net-zero targets. Whether you're interested in renewables, smart grids, energy storage, or transmission, there's a role for every skill set, from engineering and finance to policy and data analytics.

My advice is to stay curious and be proactive. Seek out internships, attend industry conferences (like CIGRE), and connect with professionals. This industry values collaboration and innovation, and there are many opportunities to contribute to meaningful change.

Also, don't underestimate the power of mentorship and networking, as it can shape your career path in unexpected ways. Australia's energy future is being built today, and there's no better time to be part of it.

Stay open-minded, get hands-on experience, and be ready to keep learning.

### How has the API helped shape your career in power so far?

The Australian Power Institute (API) has been instrumental in shaping my early career in power by offering me meaningful exposure to the industry and connecting me with a supportive network of professionals and peers. Through the TJ Effenev Award, I had the incredible opportunity to attend the CIGRE Australia Conference and present at the NEXTGEN Seminar which was an experience that significantly developed my confidence, technical communication, and industry presence.

API has also provided pathways to real-world learning beyond the classroom. By facilitating site visits to SA Power Networks and ElectraNet, I gained valuable insight into operational challenges and innovations in power systems, which is something textbooks can't teach.

Most importantly, API has helped me find my voice as an emerging leader. The chance to engage with experienced professionals like David, Hayley, and Cameron, alongside a cohort of passionate students, has inspired me to keep contributing to Australia's energy future with purpose and clarity.

## Anjala Wickramasinghe

Queensland University of Technology,  
Brisbane.

### What is the top two things you learnt at the CIGRE Australia Conference?

Attending the CIGRE Australia Conference was an incredibly valuable experience for me, both academically and professionally, as a postgraduate student in Power Engineering. It was amazing to meet people who are actively shaping the power industry in Australia.

One of the biggest things I took away is how the current electricity grid in Australia is adapting to the integration of Distributed Energy Resources (DER), especially rooftop solar, which is having the most impact. I was fascinated to learn how Distribution Network Service Providers (DNSPs) across different states are working together to



manage challenges like frequency regulation and over- or under-voltage issues caused by higher DER penetration. Seeing this kind of collaboration in action was really inspiring, especially as we move towards a net-zero future.

Another highlight was meeting so many passionate, like-minded people from across Australia. It was refreshing to connect with fellow “power enthusiasts,” especially those working in the same research area as me. I loved being able to geek out over Dynamic Operating Envelopes (DOEs) and exchange ideas with others who share my interests. I believe the connections I made during the conference would make a significant difference in my research journey.

### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

The most impactful speech I attended during CIGRE is the keynote delivered by Prof. Konstantin Papailiou who is also the President of CIGRE. His words, “There’s no Plan B, because we don’t have a Planet B,” truly inspired me to focus on how we, as individuals in the power industry, can come together to reduce the environmental impact of the current power sector. He also



emphasized on how much the power sector is relying on the future generation and how important it is for us young people to get involved early. His words inspired me to take a more active role in shaping a sustainable future for the power industry. They made me realize that waiting for others to act isn’t enough and we all have a part to play, no matter how small it may seem. I felt motivated to explore ways I can contribute, whether

through research, innovation, or simply raising awareness about the need of sustainable energy practices. Most importantly, his words reminded me that real change happens when passionate individuals come together, and they encouraged me to start making a difference today rather than tomorrow.

### What advice do you have for others considering a career in power?

I’d encourage anyone thinking about a career in power to go for it. The industry is changing fast, with renewables, smart grids, and sustainability creating so many opportunities to make a real difference. It’s challenging and will push you to think in new ways, but that’s part of the excitement. Don’t be afraid to ask questions, try different roles, or share your ideas as they matter more than you might think. Yes, it can feel a bit daunting being surrounded by experts, but the community is surprisingly welcoming and supportive. Embrace the pace of change as a chance to learn, grow, and contribute, and lean on mentors and networks along the way. With curiosity and passion, you can carve out your own path and help shape a more sustainable future.



## Austen Lindsay

**The University of Adelaide, Adelaide.**

### What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was the ability to learn about the differences in the electricity sector across the country. Electricity systems are very diverse across the country, with different technologies, approaches, and organisations. In South Australia we have just one distribution and one transmission provider which result in a unique environment that yields clear communication through the entire electricity “supply chain”. In contrast, other states have more complex systems which yield intra-state competition for consumers. At the CIGRE Australia Conference I was able to meet and listen to a variety of people from other states who shared the differences in their electricity market. A particular highlight was hearing from engineers at Ausgrid about Project Edith which offers new pricing models for customers who alter their electricity usage to support the needs of the grid. This project is quite similar to some new price schemes that SA Power Networks is trying to offer, so it was fascinating to hear about the different considerations that are made when operating in a different market. Similar to this, it was great to meet other young professionals in the sector who are soon to enter the workforce. I feel that these connections I have formed now have the potential to continue well into my career.



### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

Due to my background working at a DNSP, my perspective is often focused on how the electricity network operates for the average person with their home connection point. At the CIGRE Australia Conference my perspective was broadened with speakers talking about developments in the transmission network, as well as more economics-based perspectives about the distribution network. Of particular interest was a keynote presentation on a review paper for the National Electricity Market. The presentation drew attention to the different systems in place for the “spot market” and “contract market” which pertain to wholesale instantaneous generation of electricity and long-term generation respectively. I learnt about mechanisms that can be used to recycle and re-distribute current contracts back into the market prior to maturity. This new perspective has broadened my understanding of the business side of the electricity market.



## Sanskriti Kharel

The University of South Australia,  
Adelaide.

### What is the top two things you learnt at the CIGRE Australia Conference?

The first key learning for me was around CSIP-AUS and communication delay expectations. Listening and asking questions to the panellists gave me a deeper understanding of how site-to-network communication, alongside technologies like DERMS, will be critical for the reliability and flexibility of future grids.

This aligned strongly with my own research, and it was valuable to see how industry experts are addressing these challenges. The second key learning came from seeing how strongly the industry is investing in young professionals. From Prof. Konstantin O. Papailiou, President of CIGRE, emphasising how much the sector is relying on the next generation, to the NGN seminar, and the opportunity provided by API to attend this conference, I realised how important it is for students to get involved early. This experience not only showed me that our contributions are genuinely valued but also gave me the motivation to pursue a career in the energy sector with confidence in the path I have chosen. As a student, I might feel that my opportunities to contribute to the world are limited, but what I learnt is that the energy transition cannot happen without young professionals like me. Prof. Papailiou's words, "we may all have a plan B, but we don't have a Planet B" deeply resonated with me. As an early professional stepping into the field, I carry with me the responsibility and determination to help shape a smarter, cleaner, and more sustainable energy future.



### What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was the chance to present my perspective on Home Energy Management Systems (HEMS) to the NextGen panel. It was both exciting and humbling to share my research alongside industry leaders and peers. That moment brought together my academic learning, internship experience, and professional development into one opportunity, giving me the confidence that as a student I can meaningfully contribute to conversations about the future of our electricity networks. What advice do you have for others considering going to industry conferences? My advice would be to say yes to every opportunity and make the most of it. Go in with curiosity, ask questions, and don't be afraid to introduce yourself to people you admire. Conferences are not only about learning from presentations, but also about building relationships, finding mentors, and discovering how your own skills and interests can contribute to the bigger picture. Every conversation you have can open a door. What advice do you have for others considering a career in power? For anyone considering a career in the power sector, I would say this is one of the most exciting times to join. The industry is at the

heart of the energy transition, and there are so many opportunities to be part of meaningful change, whether that's through renewable integration, network innovation, or customer-focused technologies. My advice is to stay adaptable, keep learning, and find an area that excites you. The power sector needs people who are both technically strong and passionate about building a smarter, more sustainable future.

## Brian Wang

**The University of Adelaide, Adelaide.**

### What is the top two things you learnt at the CIGRE Australia Conference?

#### **How to Encourage and Accommodate More DER Adoption In 2025:**

the energy transition is becoming a more political and economic challenge than purely technological. My favourite quote reiterates this idea, "[The energy transition] is no longer a technology problem – it is a market design and governance challenge". SAPN speaker, Michelle Howie, pointed out that financial incentives (e.g., tariffs) and sufficient awareness of the financial incentives are key in moving retail consumers both for encouraging adoption and shifting peak demand behaviour. Thinking ahead, various DNSPs have come up with their own programs to shift consumer DER and load behaviours. In 2025, SAPN officially launched their flexible export program which uses an increased customer export limit as the main incentive to help flatten the noon DER export peak. Energy Queensland also launched their own "Solar Soaks" program to move the bulk of hot water system loads from morning to midday to combat voltage rise caused by peak DER generation. I wonder if DNSPs may one day operate both programs simultaneously to bring the peak supply and peak demand hours closer together. While Australia, particular South Australia, leads the world in renewable adoption, it is still minor when compared in absolute terms to the rest of the world. As an example, speaker Michelle Howie pointed that China installs more solar in 2 days than Australia does in an entire year. However, Australia's energy transition is still critical because a proven successful grid with high DER penetration will allow larger countries to follow our example and selectively adopt aspects to their need.



#### **Future of Utility Networks**

On the supply side, the key technical challenges the energy transition pose to the grid are voltage rises during peak solar hours and the lack of system inertia necessary for frequency stability as synchronous generators continue to shut down. As mentioned before, utilities employ incentives to shift consumer export and load behaviours to reduce the impact of DERs. On the demand side, building more network capacity can help meet peak demand, however, the rarity of peak demand means an increase in network capacity reduces the aggregate network utilisation and hence also

reduces the cost efficiency of the upgrades. Thus, a key modern challenge utilities face is deciding how much network upgrade is optimal to facilitate the increases in peak demand. Compared to deterministic planning (multiple discrete parallel plans), stochastic planning (scenario tree) reduces investment costs and provides more certainty on investments. Thus, applying stochastic planning to both transmission and distribution network upgrades simultaneously may be the best way to manage network capacity as explained by speaker Pablo.

### What was your favourite part of the TJ Effeney Award experience and why?

I enjoyed meeting the key players in the energy industry and see their different perspectives on the energy transition, i.e., what matters most to them and their biggest obstacles. The speakers can be roughly clustered as regulatory (AEMO, AEMC), utilities (SAPN, ElectraNet, Energy Queensland, etc), OEMs, and researchers.

## Bashir Bilal

**The University of Adelaide, Adelaide.**

### What is the top two things you learnt at the CIGRE Australia Conference?

Attending the 2025 CIGRE Australia Conference in Adelaide was an invaluable opportunity to expand my technical knowledge and industry awareness. One of the most significant learnings for me was understanding the complexities of integrating distributed energy resources (DERs) and inverter-based technologies into power systems. Many sessions emphasised the challenges posed by high penetration of renewable energy, including issues of system strength, inertia, and stability. The presentations on grid-forming inverters and advanced modelling techniques were particularly impactful, as they demonstrated how emerging solutions are being developed to ensure that the grid can accommodate this rapid transformation while maintaining reliability. These insights helped me to see how theory translates into engineering practice and highlighted areas where innovation will be critical.

The second major takeaway was around the evolution of market design and regulatory frameworks to support the clean energy transition. Talks on the National Electricity Market (NEM) review, system resilience, and consumer participation made it clear that engineering solutions alone cannot deliver a secure and sustainable energy future. Policy, economics, and technology must align in order to enable investment in renewables, improve flexibility, and ensure equitable outcomes for consumers. Hearing how technical requirements, market rules, and customer engagement all interact gave me a much deeper appreciation for the multidisciplinary nature of the sector. Together, these learnings broadened my perspective and reinforced my interest in pursuing a career where I can contribute to solving both the technical and systemic challenges of Australia's energy transition.



### What was your favourite part of the TJ Effeney Award experience and why?

My favourite part of the TJ Effeney Award experience was the opportunity to connect with the other awardees from across Australia. While the technical content of the conference was incredibly valuable, the chance to meet like-minded students and early-career professionals created a sense of community that was equally rewarding. Each awardee came from a different university and background, and it was inspiring to hear about the diverse projects, research interests, and career aspirations that brought us together. These conversations helped me to see the breadth of opportunities in the power sector and reminded me of the importance of collaboration in tackling complex industry challenges.

Beyond professional connections, I also found these peer interactions to be personally motivating. Hearing how others were contributing to renewable integration, smart grids, and system planning gave me new ideas and reinforced my own passion for the field. It was particularly encouraging to realise that, despite different areas of study, we all shared a common commitment to advancing Australia's clean energy future.

The API team created an environment that made it easy for us to connect and learn from each other, whether during networking events, seminars, or informal discussions. I came away from the week not only with technical insights, but also with friendships and networks that I hope to carry forward into my career. This sense of belonging and shared purpose was my favourite part of the program, as it reminded me that the energy transition is a collective journey where collaboration will be key.

### Was there a topic or speaker that challenged your thinking at the CIGRE Australia Conference? How did this experience inspire your future in the power sector?

One of the most thought-provoking moments for me at the conference was hearing Professor Konstantin Papailiou, President of CIGRE, share his perspective on the global energy transition. His reminder that "There is no Plan B, because there is no Planet B" was simple yet powerful, reinforcing the urgency of the challenges we face and the responsibility that lies with engineers to deliver solutions. His message challenged me to think not just about the technical aspects of the grid, but also about the broader role we play in ensuring a sustainable and equitable future.

Equally inspiring were the insights shared by Nicola Falcon from AEMO and Associate Professor Tim Nelson on the evolution of Australia's electricity market. Their discussions highlighted the interplay between technical innovation, policy development, and consumer behaviour in achieving net zero. This shifted my perspective by showing me that the future of the power sector requires engineers to work closely with policymakers, economists, and communities to ensure outcomes that are not only technically feasible but also socially responsible.

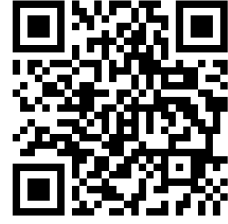


This experience has directly influenced how I see my own career path. I feel more motivated than ever to contribute to areas such as renewable integration, power system modelling, and grid stability, while also staying aware of the broader system-level considerations. The conference reminded me that the energy transition is not a distant goal but an urgent, ongoing process, and that young engineers like me have an important role to play. It has inspired me to continue building my skills so I can contribute meaningfully to a smarter, more resilient, and sustainable energy future.

## Connect With Us

If you have any questions please get in touch with:  
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